HCP Implementation Manual

MT Department of Natural Resources and Conservation

Trust Land Management Division

Forest Management Bureau

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INTRODUCTION

This HCP Implementation Manual is a desk reference designed to help the reader understand and implement the Montana DNRC Forested Trust Lands Habitat Conservation Plan (2011).

The language for understanding individual commitments and allowances are provided here. For understanding the *rationale* behind these commitments, please refer back to the final Habitat Conservation Plan document. If a copy is not available in your unit office, it can be found online at the DNRC Forest Management Bureau website.

Please contact the FMB if anything is missing, incorrect, or out of date; for assistance; or to submit suggestions that would make it more user-friendly. 542-4302

TERRESTRIAL COMMITMENTS

Grizzly Bear: Programmatic Commitments

GB-PR1 Information and Education

DNRC will provide the following:

1. Written brochures that describe risks and concerns regarding humans living and working in bear habitat to contractors and their employees conducting forest management activities prior to start of operations.
2. Bear encounter avoidance training for new DNRC personnel within 1 year of their employment date, refreshing the training for veteran employees every 5 years.

GB-PR2 Firearms Restriction

DNRC employees and contractors and their employees are prohibited from carrying firearms while on duty, unless the person is specifically authorized to carry a firearm under DNRC Policy 3-0621.

GB-PR3 Food Storage and Sanitation

DNRC personnel will adhere to the following requirements, and will incorporate these requirements in contracts for contractors and their employees who conduct forest management activities or camp in the HCP project area.

1. Human or pet food, livestock food, garbage, and other attractants will be stored in a bear-resistant manner.
2. Burnable attractants (such as food leftovers or bacon grease) will not be buried, discarded, or burned in an open campfire.

GB-PR4 New Open Road Construction in Riparian Areas and Avalanche Chutes

DNRC will minimize construction of new open roads in riparian management zones (RMZs), wetland management zones (WMZs), and avalanche chutes.

Allowance: In instances where construction of a new open road in an RMZ, WMZ, or avalanche chute is necessary for project or near-term management objectives, DNRC will document the circumstances in the Montana Environmental Policy Act (MEPA) environmental analysis. The allowance to construct a new open road in an RMZ, WMZ, or avalanche chute would occur on no more than 10 percent of the DNRC projects averaged over a 5-year reporting period in the HCP project area.

IMPLEMENTATION NOTE: Note that measures contained in this commitment apply ONLY to new roads that would be planned to be OPEN to unrestricted motorized public access.

GB-PR5 Active Den Site Protection

DNRC will suspend all motorized forest management activities within 0.6 mile (1 kilometer) of an active den site from the date of discovery through May 31.

Allowance: If DNRC confirms that bears have vacated the den site vicinity prior to May 31, DNRC may proceed with the suspended activities.

GB-PR6 Retention of Visual Screening in Riparian and Wetland Management Zones

DNRC will provide visual screening for grizzly bears in RMZs through the implementation of the HCP aquatic riparian timber harvest conservation strategy (see Section 2.2.3.1), and in WMZs through implementation of the Forest Management ARMs (ARM 36.11.426).

GB-PR7 Noxious Weed Control at Gravel Pits

DNRC gravel pits will comply with biennial agreements established with county weed boards. Noxious weeds will be managed using an integrated weed management approach.

Such practices include, but are not limited to:

(1) the use of weed-free equipment;
(2) re-vegetation of disturbed areas with site-adapted species, including native species as available;
(3) biological control measures;
(4) chemical methods as appropriate; and
(5) other stipulations and control measures included in timber sale contracts and Plans of Operations (as required under ARM 17.24.217).

Non-vegetated areas associated with large gravel pits may not exceed 40 acres.

GB-PR8 Helicopter Use

DNRC will design helicopter operations requiring flights less than 500 meters (1,640 feet) above ground level for forest management activities in a manner that avoids or minimizes flight time over known seasonally important areas in NROH or recovery zones, scattered parcels in rest in recovery zones, grizzly bear subzones in rest in recovery zones, and/or federally designated security core areas in recovery zones. Where practicable, DNRC will design flight paths less than 500 meters (1,640 feet) above ground level to occur at least 1 mile from such areas.

IMPLEMENTATION NOTE:
Projects requiring helicopter flights that are >1 mile from NROH boundaries would not be required to comply with this measure. The majority of lands that would require these considerations occur within recovery zones.

Grizzly Bear: Non-Recovery Occupied Habitat Commitments

GB-NR1 New Open Road Construction

DNRC will minimize construction of new open roads. New roads will only be managed as open when necessary to meet project or near-term management objectives. Existing roads that are restricted will generally remain restricted, except in cases where access easements are granted. There is no target or cap on total road densities.

GB-NR2 Granting of Easements

DNRC will discourage granting of future easements that relinquish DNRC control of roads, except for reciprocal access agreements, cost share agreements, and other federal road agreements (e.g., with the BLM).

IMPLEMENTATION NOTE:
The DNRC person granting the easement uses the HCP Implementation Checklist for Grizzly Bear Recovery Zones and NROH to demonstrate how easements were evaluated and discouraged. This measure will typically apply to private parties requesting grants of access to DNRC HCP lands that involve no reciprocal action. Reciprocal access agreements exempted above include those for non-federal entities.

GB-NR3 Spring Management Restrictions

These commitments apply during the spring period in spring habitat. In the Stillwater Block, spring restrictions would apply on all restricted roads during the spring period as indicated on the Transportation Plan.

1. Commercial forest management activities, including salvage harvests, are prohibited during the spring period in spring habitat.

   Spring habitat is defined as:

   - Areas associated with roads possessing restricted status during the spring period on the Stillwater Block
   - All habitat below 5,200 feet elevation in the Swan River State Forest
   - All habitat below 4,900 feet elevation on scattered parcels.

   Spring period is defined as:

   - April 1 through June 15 for non-spring habitat and April 1 through June 30 for areas within spring habitat for the Stillwater Block
   - April 1 through June 15 for lands within the Swan River State Forest and DNRC scattered parcels in recovery zones and NROH.

IMPLEMENTATION NOTE: STILLWATER BLOCK
Spring and non-spring habitat polygons are not delineated. Rather, activity restrictions during the spring period are applied by way of road restrictions as identified in the Stillwater Block

Transportation Plan. This approach is different than that for all other HCP lands in recovery zones.

2. The following low-intensity forest management activities are prohibited during the spring period in spring habitat:
    - Pre-commercial thinning
    - Heavy equipment slash treatment.
3. **Allowance:** Each year, 10 days total are allowed on each administrative unit during the spring period in spring habitat for the purposes of mechanical site preparation, road maintenance, and bridge replacement. Any combination of these three activities, in aggregate, counts toward the 10-day limit.
4. DNRC will minimize motorized activities on restricted roads during the spring period in spring habitat.

    Allowance: Motorized use is allowed to conduct the following low-intensity forest management activities in spring habitat during the spring period:

    - Sale preparation
    - Road location
    - Tree planting
    - Prescribed burning
    - Data collection (including monitoring)
    - Non-heavy-equipment slash treatment (chainsaws allowed)
    - Patrol of fall/winter slash burns
    - Noxious weed management.

    Commitment GB-CY3 supersedes items (3) and (4) of this commitment in CYE.

5. **Allowance:** Commercial forest management activities (including salvage harvests) and low-intensity forest management activities are allowed within 100 feet of an open road during the spring period in spring habitat.

IMPLEMENTATION NOTE: STILLWATER BLOCK
To maintain the integrity of rest associated with spring restricted roads, to the extent practicable, no motorized activities shall be conducted within 500 feet of roads with spring restrictions during the spring period. Where spring restricted roads are close to, or intersect with open roads, allowable low intensity activities and commercial activities could occur within 100 feet of the open segment.

GB-NR4 Distance to Visual Screening

DNRC will design new clearcut and seed tree cutting units to provide topographic breaks in view or to retain visual screening for bears by ensuring that vegetation or topographic breaks be no greater than 600 feet in at least one direction from any point in the unit.

Allowance: Limiting new opening sizes may not be practical in situations involving steep, open faces; where broadcast burning is prescribed for post-harvest treatment; or where insects, disease, prescribed fire, or wildfire have hampered retention of live vegetation. In instances of impracticability, DNRC will document the circumstances in the MEPA environmental analysis.

IMPLEMENTATION NOTE: For tracking purposes, also document any instances of impracticability in the "Remarks Column" of the HCP Implementation Checklist.

GB-NR5 Grazing Restrictions

1. DNRC will submit a weed grazing mitigation plan for the use of small livestock on NROH lands to the USFWS for review 30 days prior to a decision to grant a grazing license or lease for the purpose of weed control. The weed grazing mitigation will include a description of the location of the project and documentation identifying known activity by bears in the area. The plan will document whether DNRC followed the USFWS's suggestions (if any were submitted) and if not, which measures were selected instead and why. The intent of this review is to give the USFWS an opportunity to provide DNRC with relevant information regarding site-specific bear use in the area and/or new mitigation measures. If the USFWS does not respond within 30 days, DNRC may proceed with issuance of the license or lease and implement the mitigation plan. Mitigation measures in the plan may include, but are not limited to, requirement of a full-time shepherd, guard dogs, nighttime electric pens, lessee assuming cost of losses incurred by predators, prohibition of grazing in spring habitat during spring periods, attending training on hazing techniques, and maintaining a list of professionals providing hazing services.
2. DNRC will cooperate with other parties, agencies, and bear management specialists on a case-by-case basis to address prompt removal of livestock carcasses in the HCP project area that have been identified as creating the potential for bear-human encounters.

GB-NR6 Gravel Operations

The following measures supplement commitment GB-PR7, and are further supplemented by commitments GB-ST5, GB-SW5, and GB-SC4.

Third-party gravel pit operators and gravel permit holders using DNRC pits authorized under this strategy will not be covered for incidental take under this Permit. However, these operations will be subject to the limitations on the number of allowable pits and season of use as described below in this commitment.

1. For each DNRC administrative unit, three specific pits may be considered active for a particular calendar year within the combined geographic area bounded by the grizzly bear NROH and grizzly bear recovery zone boundaries. No more than two active pits may be large pits. There is no restriction on the number of pits on scattered parcels outside of these distinct geographic areas.

2. When counting active pits, those pits used for state and federal road projects that are more than 0.25 mile from an open road will be counted in the number of allowable active pits at the administrative unit level. Gravel pits used for state and federal road projects that are within 0.25 mile of an open road will not be counted in the total number of allowable active pits and will not be subject to restrictions on season or duration of use (see item (4) below).

IMPLEMENTATION NOTE:
The state and federal road projects mentioned in this commitment refer to state and federal highway projects conducted by MDT – generally federally funded and with federal oversight and NEPA process requirement for project development and completion. DNRC recognized when developing this commitment that there was limited ability to refuse providing materials for such projects, so they were singled out. These are considered differently than state DNRC projects involving forest road construction and maintenance etc.

3. Gravel pits situated within 0.25 mile of an open road may be developed and operated without restrictions on season of use and duration of motorized activity. For gravel pits within 0.25 mile of seasonally restricted roads, operations may occur only during the season(s) they are not restricted under transportation planning.

IMPLEMENTATION NOTE:
Gravel pits situated <0.25 miles of open roads still must be counted against the annual allowable total of active pits for the Unit. Language in GB-NR3(3) simply means such pits can be operated year round with as many trips in and out as needed if they are located right off an open road.

4. **Allowance:** Limited gravel pit operations may occur during the spring period in pits more than 0.25 mile from an open road, but the operating days will count against the 10-day allowable operating days for low-intensity forest management activities during the spring period (see commitment GB-NR3).

5. **Allowance:** Gravel development and use associated with borrows is considered a normal and necessary component of road construction and road maintenance. Development and use of borrows is allowed unconstrained when associated with allowable road construction and/or road maintenance activities.

IMPLEMENTATION NOTE:
These measures are only required for developing gravel pits on DNRC HCP lands. However, there is no incidental take protection for any of the pits on non-HCP lands. So it is still prudent to have operational restrictions for sensitive seasons and areas as warranted to cover ESA concerns on those lands, if there are any (i.e., we still can't ignore ESA issues on non-HCP lands).

Grizzly Bear: Recovery Zone Commitments

GB-RZ1 Habitat Considerations

When designing timber sale projects in recovery zones, DNRC will assess impacts to important grizzly bear habitat elements. Examples of such habitat elements include important berry fields, avalanche chutes, riparian areas, wetlands, white bark pine stands, and unique congregation or feeding areas. DNRC will develop site-specific mitigation measures that minimize impacts to these elements. Mitigation measures would typically involve scheduling activities to occur while bears are not likely to be using an area or locating roads or skid trails to conserve important vegetative features, such as dense stands or thickets that provide visual screening.

Allowance: In instances where habitat elements cannot be incorporated into project designs for practicability reasons, DNRC will document the circumstances in the MEPA environmental analysis.

IMPLEMENTATION NOTE:
For tracking purposes, documentation is also required in the HCP Implementation Checklist.

GB-RZ2 Visual Screening

DNRC will leave up to 100 feet of vegetation between open roads and clearcut or seed tree harvest units. Open roads where visual screening must be retained are considered those accessible to the general public during any portion of the grizzly bear non-denning season.

Allowance: Leaving vegetation will not be practicable in some areas, such as, but not limited to, where landings and skid trails intersect or are adjacent to roads, in visual clearings for traffic safety at intersections, in localized fuels reduction areas, in units harvested by aerial cable, in salvage units with limited standing live vegetation near the roadway, and in prescribed burn units where the open roads serve as the control boundary. In instances of impracticability, DNRC will document the circumstances in the MEPA environmental analysis.

IMPLEMENTATION NOTE:
For tracking purposes, documentation is also required in the HCP Implementation Checklist.

GB-RZ3 Road Closure Maintenance

DNRC will examine all primary road closures in recovery zones annually and repair ineffective closures within 1 year of identifying the problem.

IMPLEMENTATION NOTE:
Primary road closures are those first closures on a road system intended to restrict motorized access. Gates behind other gates or closure devices are considered secondary or tertiary...etc. etc. closure devices.

GB-RZ4 Grazing Restrictions

For projects in the recovery zone, this commitment supersedes commitment GB-NR5.

1. DNRC will prohibit authorization of any new small livestock (smaller than a cow) grazing licenses, including those for the purposes of weed control, and will also not convert existing licenses to allow the grazing of small livestock.
2. DNRC will not initiate establishment of new grazing licenses. Proposals initiated by the public for larger, less vulnerable classes of livestock (such as cows and horses) may be considered and allowed by DNRC.

GB-RZ5 Post-Denning Mitigation

DNRC will prohibit motorized activities at elevations above 6,300 feet on slopes greater than 45 percent from April 1 through May 31.

GB-RZ6 Granting of Easements

This commitment supplements GB-NR2.

1. The FMB will have an active role in the review and authorization of future easements across the HCP project area in a recovery zone.
2. Easements granted for existing restricted routes or newly proposed routes will require the applicant to demonstrate that all other access possibilities have been explored prior to DNRC considering the application for access across trust lands.
3. When granting easements for motorized access in recovery zones, DNRC will work with easement applicants to incorporate measures to avoid or mitigate impacts to bears. Easement terms may include, but are not limited to, gated entry, maintenance of visual screening along routes, and absorbing costs of gating associated with secondary and primary access routes.
4. For each access easement granted in a recovery zone, DNRC will provide the USFWS with documentation on how the granting of the easement was evaluated, how alternative routes were considered, and how mitigations were considered and/or applied.
5. Pertaining to access agreements on roads in grizzly bear recovery zones, the following shall occur where DNRC is the Grantor. In the development of new reciprocal access agreements and during the reassignment of easement rights under existing reciprocal access agreements, DNRC will attempt to work with the existing and future grantees to avoid or mitigate impacts to grizzly bears associated with motorized use.

This commitment does not apply to road agreements with federal agencies (e.g., cost-share agreements with the USFS or road agreements with the BLM), because the federal agencies retain jurisdiction of the roads, and those agencies are required to comply with Section 7 of the ESA.

COMMENTS ON IMPLEMENTATION:
The DNRC person granting the easement uses the HCP Implementation Checklist section pertaining to this commitment (GB-RZ6) to demonstrate how easements were discouraged, evaluated and mitigated.

Grizzly Bear: Stillwater Block Commitments

GB-ST1 Transportation Management

1. DNRC commits to transportation management in the Stillwater Block as identified in Table 2-2 and the transportation plan maps (Appendix C, Figures C-4A and C-4B). This transportation plan identifies:
    - Road miles by road class, activity category, and restriction type under current management strategies (Table 2-2 and Figure C-4A) and estimated under the HCP (Table 2-2 and Figure C-4B)
    - Permanent routes needed but not yet constructed by DNRC to fulfill agency responsibilities for the 50-year Permit term (see Proposed Roads in Table 2-2 and Figure C-4B).
2. If a road is encountered that is not in the transportation plan, and evidence suggests that the road existed prior to the signing of the HCP, DNRC will promptly notify the USFWS of the road being added to the transportation plan. The road would be considered part of the original baseline.
3. In addition to the permanent roads identified in the transportation plan, DNRC may maintain up to 8 miles of temporary roads at any one time. These roads will be built to a minimum standard and abandoned or reclaimed within one operating season following completion of project-related activity.
4. If a DNRC parcel in the Stillwater Block is sold or traded, the numbers in Table 2-2 will be adjusted to accurately reflect baseline road amounts. The numbers will also be adjusted as needed if parcels are added to the Permit following a land exchange or purchase. Future open road needs on acquired parcels will be scrutinized, added to the table, and reported to the USFWS as described in the transition lands strategy (Chapter 3).
5. DNRC will install signs indicating bear presence on the main open roads (portal roads) entering the Stillwater and Coal Creek State Forests. DNRC will determine the exact number and locations of signs to post, and will be responsible for keeping signs in good repair. Repairs will be integrated into the normal course of seasonal maintenance activities. DNRC will have 2 years from the issuance of the Permit to install the signs.

GB-ST2 Class A Lands

The following commitments will apply to Class A Lands in the Stillwater Block:

1. **No New Permanent Roads.** No additional permanent roads, beyond those that currently exist, will be constructed on Class A lands for the duration of the Permit. Access needed for management activities would be from existing or temporary roads.
2. **Active Management Followed by Rest.** Class A lands are divided into four geographic subzones, as depicted in the transportation plan maps (Appendix C, Figure C-4B). In each subzone, DNRC may conduct commercial forest management activities including salvage harvest for a maximum management period of 4 years, followed by a mandatory rest period

of at least 8 years. Each subzone will have its own management/rest period schedule independent of the other subzones.

Allowance: The 4-year management period may be extended due to management delays beyond the control of DNRC, such as extreme weather events, fire events, area closures due to fire danger, or legal injunction. In such cases, DNRC will write an explanation of the extension and submit it to the USFWS at the time the extension is invoked. Contractor equipment failure and extensions to address market fluctuations are not considered allowable delays.

3. **Management Activities Allowed During Rest.** The following activities will be allowed in rested subzones.
    a. Rest is intended to be a mitigation measure for the period when bears are active. Therefore, the rest status does not apply during the winter period (November 16 through March 31), and commercial forest management activities are allowed in winter below 6,300 feet without limitation during rest periods.
    b. Low-intensity forest management activities will be allowed during the rest period, except for restrictions during the spring period, as described in commitment GB-NR3, Spring Management Restrictions. Spring restrictions and allowable road use on the Stillwater Block are built into the transportation plan.
    c. Commercial forest management activities will be allowed for minor projects, including salvage, after the spring period in the Stillwater Block. A total of 30 operating days in aggregate are allowed per year, per rested subzone (days can only be used June 16 through November 15 in non-spring habitat and July 1 through November 15 in spring habitat). This 30-day **allowance** may also be applied to resting subzones that have exceeded rest beyond 8 years that are not yet ready for large-scale planned commercial harvest. When tracking the number of operating days allowed for minor projects:
        i. Two commercial operations within 0.5 mile of one another count as one operation for those days both are active. Operations more than 0.5 mile apart are considered distinct, and operating days must be considered additive and tallied separately.
        ii. Commercial forest management activities within 100 feet of an open road do not count toward the allowable operating day limits.

GB-ST3 Salvage on Rested Class A Lands

1. DNRC will conduct salvage harvest activities under the following order of preference, when economically and operationally practicable:
    a. Conduct salvage during the winter period
    b. For salvage harvest that must occur outside of the winter period, conduct the harvest in an expedient manner

c. Days used for operating salvage harvest from June 16 through November 15 shall count toward the 30 days allowed for minor projects (described in commitment GB-ST2)

d. DNRC will forgo unused annual operating days in other inactive subzones to compensate for the number of days required to complete such projects.

2. **Allowance:** Salvage projects that cannot be accomplished using the four approaches above may be extended between 31 and 150 days during the non-denning period. The following conditions would apply:

   a. Following a 31- to 150-day extension for salvage, DNRC would be required to restart a new 8-year rest period. In this situation, a full uninterrupted 8-year rest period must be achieved before allowing another 31- to 150-day interruption. If a salvage harvest during the restarted rest period requires more than 30 days to complete, the action would be processed as a changed circumstance (see Chapter 6 in the HCP).

   b. DNRC will document the necessity for interrupting the rest period. A DNRC wildlife **biologist** will develop a site-specific mitigation plan addressing potential effects on grizzly bears through habitat considerations, timing restrictions, and transportation management and access.

   Examples of habitat considerations include important secure areas, berry fields, avalanche chutes, riparian areas, wetlands, white bark pine stands, and unique congregation or seasonal feeding areas. The DNRC project leader and DNRC decision maker will consider the input from the biologist. A copy of the mitigation documentation highlighting those measures implemented by the project leader and decision maker (Appendix B, Document B-1 – HCP Checklist for Salvage Projects Proposed for Parcels in Rest within Grizzly Bear Recovery Zones) will be submitted to the USFWS prior to a project decision.

GB-ST4 Class B Lands

The following commitments will apply to Class B Lands in the Stillwater Block:

1. Additional roads necessary to access DNRC lands to conduct forest management activities in the future are identified in the transportation plan. Access needed to conduct management activities would be from existing, proposed, or temporary roads. DNRC is committing to the total number of proposed road miles and approximate locations as identified in the transportation plan map (Appendix C, Figure C-4B) and as shown in Table 2-2. Individual road locations and distances may vary when project-level engineering and design occur.
2. Specific seasonal restrictions are also identified in the transportation plan (Appendix C, Figure C-4B). Additional year-round restricted roads are identified with specific seasonal restrictions on DNRC commercial forest management activities during appropriate periods. The intent of these restrictions is to increase the level of security for grizzly bears during important seasons and in key locations.

3. DNRC will prohibit commercial forest management activities and motorized use associated with low-intensity forest management activities during the spring period on a total of 39.6 miles of road identified as restricted in the transportation plan (Appendix C, Figure C-4B). Various individual roads may move in or out of this subset, but the 39.6-mile total will not change.

   Allowance: Low-intensity forest management activities conducted without motor vehicles or motorized equipment are allowed on the 39.6 miles.

   Note: 7.9 miles of this 39.6 miles identified in the transportation plan have not yet been built; thus, until they are constructed, DNRC must constrain low-intensity forest management activities during the spring period to the 31.7 miles that currently exist.

4. On roads where spring restrictions are identified on the transportation plan map (Appendix C, Figure C-4B), the spring habitat restrictions (commitment GB-NR3) extend through June 30. On all other roads on Class B lands that do not have spring restrictions identified on the transportation plan map (i.e., those in non-spring habitat), spring habitat restrictions would extend through June 15.

5. A general description of the location and length for proposed road segments is provided in the transportation plan map (Appendix C, Figure C-4B). Estimated road lengths are rounded to within 0.1 mile (see Table 2-2). Precise miles and locations may vary slightly during construction.

GB-ST5 Gravel Operations

The following commitments supplement commitments GB-PR7 and GB-NR6.

1. DNRC will limit the number of active gravel pits on the Stillwater Block as follows: five specific pits may be considered active for a particular calendar year (no more than three may be large).

2. Gravel pits situated within 0.25 mile of an open road may be developed and operated without restrictions on season of use and duration of motorized activity.

IMPLEMENTATION NOTE: Gravel pits situated <0.25 miles of open roads still must be counted against the annual allowable total of active pits for the Unit. Language in GB-ST5(2) simply means such pits can be operated year round with as many trips in and out as needed if they are located right off an open road.

3. Large gravel pits more than 0.25 mile from an open road are prohibited on Class A lands.

4. During the 4-year window for commercial forest management in active subzones on Class A lands, gravel pits that are more than 0.25 mile from an open road may be developed and operated outside of the spring period without restriction on amount and duration of activity.

5. Only one gravel pit may be operated more than 0.25 mile from an open road on Class B lands. Operations and duration of use will be conducted in accordance with the transportation plan. Such pits requiring more than 2 consecutive years of frequent motorized activity (average of one or more trips per week) will require an amendment to the

transportation plan to accommodate the associated road system, which will be managed as functionally open.

6. One gravel pit may be operated more than 0.25 mile from an open road on Class B lands without following transportation plan restrictions if: (1) DNRC minimizes the distance of the pit from an open road, and (2) to the extent possible, DNRC ceases activities on all allowable remaining pits while the gravel pit is active. Purchasers or other licensed third parties will be allowed to continue to operate within the active pits that have legally defined operating periods by license or contract.

IMPLEMENTATION NOTE:

STILLWATER BLOCK -- A total of 8 active gravel pits may be operated on Stillwater Unit lands during any calendar year. 5 of these may occur on the Stillwater Block (only 3 of which may be large). Of these 5, only 1 can be operated >0.25 miles from an open road.

STILLWATER SCATTERED LANDS -- Of the 8 total pits allowed on the Stillwater Unit, 3 may occur on Stillwater *Scattered Lands* (only 2 of these may be large). Of these 3 pits on scattered lands, only 1 may be operated >0.25 miles from an open road.

CLASS A LANDS -- Gravel pits may be constructed and operated on Class A lands only if they would occur <500 feet from an open road. Such pits would also have to be counted towards the 5 allowable pits on Stillwater Block Lands. Access routes >500 feet meet the minimum definition of a road, and new road segments are prohibited on Class A Lands.

Grizzly Bear: Swan River State Forest Commitments

GB-SW1 Transportation Management

1. DNRC commits to transportation management in the Swan River State Forest as identified in Table 2-3 and the transportation plan maps (Appendix C, Figures C-6A and C-6B). The map identifies
    - Road miles by road class, activity category, and restriction type currently under the Swan Agreement (Table 2-3 and Figure C-6A), estimated under the future Swan Agreement (Table 2-3), and estimated under the HCP (Table 2-3 and Figure C-6B).
    - Permanent routes needed but not yet constructed by DNRC to fulfill agency responsibilities for the 50-year Permit term (see Proposed Roads in Table 2-3 and Figure C-6B).
2. If a road is encountered that is not in the transportation plan, and evidence suggests that the road existed prior to the signing of the HCP, DNRC will promptly notify the USFWS of the road being added to the transportation plan. The road would be considered part of the original baseline.
3. If a Swan River State Forest parcel is sold or traded, the numbers in Table 2-3 will be adjusted to accurately reflect baseline road amounts. The numbers will also be adjusted as needed if parcels are added to the Permit following exchange or purchase. Future open road needs on acquired parcels will be scrutinized, added to the table, and reported to the USFWS.
4. To minimize the risk of death or injury to bears, and to reduce displacement of bears due to the presence of roads, DNRC makes the following commitments.
    a. DNRC will limit new road construction to the approximate locations and lengths indicated on the transportation plan map (Appendix C, Figure C-6B). This includes approximately 70.3 miles of new road, which will become part of the permanent road system but not open for public use (Table 2-4). Some slight variation in precise road locations will be needed to better accommodate BMPs and logging system design.
    b. In addition to roads indicated on the transportation plan map (Appendix C, Figure C-6B), total temporary roads will not exceed 5 miles in length in any given year. These roads will be built to a minimum standard and reclaimed within one operating season following completion of project-related activity.
    c. Except where commercial forest management activities are occurring, DNRC expects that all other road use on restricted roads it controls will conform to the "low use" (less than one vehicle per day) category of Mace et al. (1999).
    d. Some roads that are currently restricted to the public under the Swan Agreement would not be under the sole jurisdiction of DNRC and therefore may receive more use than earlier envisioned. These roads may receive use by other adjacent landowners or those with access or ownership rights. These roads are indicated as open in the transportation plan map (Appendix C, Figure C-6B).

e. DNRC will limit the amount of new road construction on the Swan River State Forest to those approximate amounts estimated by decade in Table 2-4.

5. DNRC will install signs indicating bear presence on the main open roads (portal roads) entering the Swan River State Forest. DNRC will determine the exact number and locations of signs to post and will be responsible for keeping signs in good repair. Repairs will be integrated into the normal course of seasonal maintenance activities. DNRC will have 2 years from the issuance of the Permit to install the signs.

Table 2-4.Estimated Miles Of New Road Construction By Decade For The Swan River State Forest

Decade	Miles of New Road Construction[1]
2004–2007	8.9
2008–2017	18.6
2018–2027	11.0
2028–2037	15.7
2038–2047	9.1
2048–2057	7.0

[1] These estimates do not include temporary roads that may be constructed during the Permit term.

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GB-SW2 Adjacent Landowners

DNRC will consider opportunities to work with adjacent landowners in a cooperative manner to support grizzly bear conservation efforts.

GB-SW3 Active Management Followed by Rest

1. **Active Management Followed by Rest.** The Swan River State Forest is divided into five geographic subzones, as depicted in the Appendix C, Figure C-7. In each subzone, DNRC may conduct commercial forest management activities, including salvage harvest for a maximum management period of 4 years, followed by a mandatory rest period of at least 8 years. Each subzone will have its own management/rest period schedule independent of the other subzones. The 4-year management period may be extended due to management delays beyond the control of DNRC, such as extreme weather events, fire events, area closures due to fire danger, and legal injunction. In such cases, DNRC will write an explanation of the extension and submit it to the USFWS at the time the extension is invoked. Contractor equipment failure and extensions to address market fluctuations are not considered allowable delays.
2. **Management Activities Allowed During Rest.** The following activities will be allowed in rested subzones.
    a. Rest is intended to be a mitigation measure for the period when bears are active. Therefore, the rest status does not apply during the winter period (November 16 through March 31), and commercial forest management activities are allowed in winter below 6,300 feet without limitation during rest periods.

b. Low-intensity forest management activities will be allowed during the rest period, except for restrictions during the spring period, as described in commitment GB-NR3, Spring Management Restrictions.

c. Commercial forest management activities for minor projects, including salvage, will be allowed for a limited number of days after the spring period. For the Swan River State Forest, a total of 30 operating days in aggregate are allowed per year, per rested subzone (days can only be used June 16 through September 15). DNRC will limit the allowable annual operating days to 30 in aggregate per inactive subzone to conduct minor projects. This 30-day **allowance** may also be applied to resting subzones that have exceeded rest beyond 8 years and are not are not yet ready for large-scale planned commercial harvest. When tracking the number of operating days allowed for minor projects:

   i. Two commercial operations within 0.5 mile of one another count as one operation for those days both are active. Operations more than 0.5 mile apart are considered distinct, and operating days must be considered additive and tallied separately.

   ii. Commercial forest management activities within 100 feet of an open road do not count toward the allowable operating day limits.

GB-SW4 Salvage on Rested Subzones

1. DNRC will conduct salvage harvest activities under the following order of preference, when economically and operationally practicable:
   a. Conduct salvage during the winter period
   b. For salvage harvest that must occur outside of the winter period, conduct the harvest in an expedient manner
   c. Days used for operating salvage harvest from June 16 through September 15 shall count toward the 30 days allowed for minor projects (described in commitment GB-SW3)
   d. DNRC will forgo unused annual operating days in other inactive subzones to compensate for the number of days required to complete such projects.
2. Salvage projects that cannot be accomplished using the four approaches above may be extended between 31 and 150 days during non-denning period. The following conditions would apply:
   a. Following a 31- to 150-day extension for salvage, DNRC would be required to restart the rest period. In this situation, a full uninterrupted 8-year rest period must be achieved before allowing another 31- to 150-day interruption. If a salvage harvest during the restarted rest period requires more than 30 days to complete, the action would be processed as a changed circumstance (see Chapter 6).
   b. DNRC will document the necessity for interrupting the rest period. A **DNRC wildlife biologist** will develop a site-specific mitigation plan addressing potential effects on grizzly bears through habitat considerations, timing restrictions, and

transportation management and access. Examples of habitat considerations include important secure areas, berry fields, avalanche chutes, riparian areas, wetlands, white bark pine stands, and unique congregation or seasonal feeding areas. The DNRC project leader and DNRC decision maker will consider the input from the biologist. A copy of the mitigation documentation highlighting those measures implemented by the project leader and decision maker (Appendix B, Document B-1) will be submitted to the USFWS prior to a project decision.

GB-SW5 Gravel Operations

The following commitments supplement commitment GB-NR6:

1. DNRC will limit the number of active gravel pits on the Swan River State Forest: four specific pits may be considered active for a particular calendar year (no more than three may be large).
2. Gravel pits situated within 0.25 mile of an open road may be developed and operated without restrictions on season of use and duration of motorized activity.

IMPLEMENTATION NOTE:
Gravel pits situated <0.25 miles of open roads still must be counted against the annual allowable total of active pits for the Unit. Language in GB-SW5(2) simply means such pits can be operated year round with as many trips in and out as needed if they are located right off an open road.

3. During the 4-year window for commercial forest management in active subzones, gravel pits that are more than 0.25 mile from an open road may be developed and operated outside of the spring period without restriction on amount and duration of activity.
4. One gravel pit more than 0.25 mile from an open road may be operated in one selected resting subzone on the Swan Unit. When the pit is operated more than 0.25 mile from an open road in a resting subzone, DNRC will: (1) minimize the distance of the pit from an open road, and (2) to the extent possible, cease activities on all allowable remaining pits while the gravel pit is active. Purchasers or other licensed third parties will be allowed to continue to operate within the active pits that have legally defined operating periods by license or contract.

Grizzly Bear: Commitments for Scattered Parcels in Recovery Zones

GB-SC1 Open Roads

For projects on scattered parcels in recovery zones and for projects in the NROH associated with the CYE, this commitment supplements commitment GB-NR1.

1. DNRC will evaluate each open road segment occurring within a forest management project to assess the potential to restrict access on that segment. DNRC will describe, through written rationale on a checklist form, why open roads were left open (Appendix B, Document B-2 – Open Road Reduction Checklist for Projects on Scattered Parcels in Grizzly Bear Recovery Zones).
2. DNRC will not exceed the HCP baseline open road amounts (total length), at the administrative unit level, for the purpose of conducting forest management activities. Accounting will be accomplished project by project, with open road densities being tallied at the unit level. HCP baseline data and maps and subsequent maps will be archived by the DNRC FMB.

Allowance: Increases in open road densities at the project level to address road relocation considerations, when there are riparian areas or BMP concerns, would not count against the unit-level cap. These circumstances would be documented in the HCP implementation checklist (Appendix B, Document B-2).

3. To improve accuracy over time, the DNRC GIS road layer will be updated by project-level road assessments that consider road classifications, locations, and amounts.

GB-SC2 Active Management Followed by Rest

1. **Active Management Followed by Rest.** For each scattered parcel in a recovery zone, DNRC may conduct commercial forest management activities and salvage harvest for a maximum management period of 4 years, followed by a mandatory rest period of at least 8 years. Each parcel will have its own management/rest schedule independent of other parcels.

   Allowance: The 4-year management period may be extended due to management delays beyond the control of DNRC, such as extreme weather events, fire events, area closures due to fire danger, and legal injunction. In such cases, DNRC will write an explanation of the extension and submit it to USFWS at the time the extension is invoked. Contractor equipment failure is not considered an allowable delay.
2. **Allowance: Management Activities Allowed During Rest.** The following activities will be allowed in rested subzones.
   a. Rest is intended to be a mitigation measure for the period when bears are active. Therefore, the rest status does not apply during the winter period (November 16 through March 31), and commercial forest management activities are allowed in winter below 6,300 feet without limitation during rest periods.

b. Low-intensity forest management activities will be allowed during the rest period, except for restrictions during the spring period, as described in commitment GB-NR3, Spring Management Restrictions.

c. Commercial forest management activities for minor projects, including salvage, will be allowed for a limited number of days after the spring period (i.e., useable between June 16 and November 15). For scattered parcels in recovery zones, each administrative unit has a specific maximum number of allowable operating days per year on rested parcels, as identified in Table 2-5. When tracking the number of operating days allowed for minor projects:

   i. Two commercial operations within 0.5 mile of one another count as one operation for those days both are active. Operations more than 0.5 mile apart are considered distinct, and operating days must be considered additive and tallied separately.

   ii. Commercial forest management activities within 100 feet of an open road do not count toward the allowable operating day limits.

Table 2-5. ANNUAL Limits for Commercial Forest Management Activities for Minor projects in 8-year Rest Periods on Scattered parcels in Recovery Zones

Administrative Unit[1]	Annual Maximum Operating Days[2]
Clearwater	45
Helena	45
Kalispell	60
Missoula	45
Stillwater Unit	45

[1] The allowable operating days for the Libby and Plains Units are presented in Table 2-6.

[2] Indicates days allowed for use after the spring period during the remainder of the non-denning season.

GB-SC3 Salvage Projects on Rested Parcels

The following commitments supplement commitment GB-NR6.

1. Prior to implementing a salvage harvest, DNRC will conduct salvage harvest activities under the following order of preference, when economically and operationally practicable:
   a. Conduct salvage during the winter period.
   b. For salvage harvest that must occur outside of the winter period, conduct the harvest in an expedient manner.
   c. Days used for operating salvage harvest from June 15 through November 15 shall count against the allowable days per administrative unit for minor projects (described in commitment GB-SC2 and Table 2-5, as well as Table 2-6 under commitment GB-CY1 below).

d. DNRC will forgo unused annual allowable operating days usable in other inactive parcels to compensate for the number of days required to complete such larger projects.

2. **Allowance:** Salvage harvest that cannot be accomplished using the four approaches listed above may be extended up to 150 days.

   a. DNRC is not required to restart the 8-year rest period on scattered parcels, but only one interruption is allowed per 8-year rest period per parcel for this purpose. Subsequent projects requiring more than the allowable days specified for each administrative unit to implement in an 8-year rest period would be addressed as a changed circumstance (see Chapter 6).

   b. DNRC will document the necessity for interrupting the rest period. A **DNRC wildlife biologist** will develop a site-specific mitigation plan addressing potential effects on grizzly bears through habitat considerations, timing restrictions, and transportation management and access. Examples of habitat considerations include important secure areas, berry fields, avalanche chutes, riparian areas, wetlands, white bark pine stands, and unique congregation or seasonal feeding areas. The DNRC project leader and DNRC decision maker will consider the input from the biologist. A copy of the mitigation documentation highlighting those measures implemented by the project leader and decision maker (Appendix B, Document B-1) will be submitted to the USFWS prior to a project decision.

GB-SC4 Gravel Operations on Rested Parcels

The following commitment supplements commitments GB-PR7 and GB-NR6.

One gravel pit per DNRC administrative unit may be operated more than 0.25 mile from an open road on a rested scattered parcel. In this situation, DNRC will: (1) minimize the distance of the pit from an open road, and (2) to the extent possible, cease activities on all allowable remaining pits in the administrative unit while the gravel pit is being operated. Purchasers or other licensed third parties will be allowed to continue to operate within the active pits that have legally defined operating periods by license or contract.

Grizzly Bear: Cabinet-Yaak Ecosystem Commitments

IMPLEMENTATION NOTE:
Note that the PR, NR, RZ, and SC grizzly bear commitments apply to ***both*** CYE recovery zone lands and CYE-associated NROH areas in addition to these CY measures listed below.

GB-CY1 Minor Projects during the 8-Year Rest Period

For parcels in both the CYE recovery zone and the CYE NROH, commercial forest management activities (including salvage harvests) are allowed after the spring period, but are limited to a set number of annual operating days per administrative unit, as identified in Table 2-6. Within the maximum operating days identified in Table 2-6, commercial forest management activities and salvage harvest on Libby and Plains Unit parcels are limited to a total of 10 parcels per non-denning season for each unit. In addition, the duration of such management is limited to 15 days in aggregate on each parcel for each unit.

TABLE 2-6. ANNUAL LIMITS FOR COMMERCIAL FOREST MANAGEMENT ACTIVITIES FOR MINOR PROJECTS IN 8-YEAR REST PERIODS ON SCATTERED PARCELS IN THE CYE RECOVERY ZONE AND CYE NROH

Administrative Unit	Annual Maximum Operating Days[1]
Libby	30 west and 60 east (90 total)
Plains	45

[1] Indicates days allowed for use after the spring period during the remainder of the non-denning season.

IMPLEMENTATION NOTE:
A tracking tool will be developed to track and record parcels and days of activity used for Plains and Libby unit offices.

GB-CY2 Salvage Projects in the CYE

This commitment applies to CYE recovery zone and CYE NROH. This commitment supplements GB-SC3 item (3).

Following completion of a mitigation plan as required under GB-SC3 item (3), DNRC will submit the mitigation plan to the USFWS for approval. The USFWS will have 30 days from the date a plan is submitted for review and approval. Within 30 days, the USFWS will respond with its concerns and proposed changes required for approval. If the USFWS does not respond within 30 days, DNRC may proceed with the project. The purpose of this review is to identify the USFWS' concerns and required remedies and subsequently approve the project once DNRC has addressed the USFWS' concerns.

GB-CY3 More Restrictive Management in the Spring Period

This commitment supersedes items (3) and (4) in commitment GB-NR3.

DNRC may conduct some motorized use associated with low-intensity forest management activities on up to 50 percent of the parcels in the CYE recovery zone and CYE NROH in spring habitat during the spring period. These uses include tree planting, prescribed burning, patrol of slash burns, and noxious weed management. Any combination of the aforementioned activities is limited to 10 days per parcel within the spring period each year.

Table 2-7 compares activities allowed during the spring period on other scattered parcels in the recovery zones and NROH with those activities allowed in the CYE recovery zone and CYE NROH.

TABLE 2-7. ACTIVITIES ALLOWED DURING THE SPRING PERIOD[1] IN SPRING HABITAT

	NROH and Recovery Zones outside the CYE	CYE Recovery Zone and CYE NROH
Sale preparation	Allowed	No motorized
Road location	Allowed	No motorized
Tree planting	Allowed	≤ 10 days aggregate per year per parcel
Prescribed burning	Allowed	≤ 10 days aggregate per year per parcel
Data collection/monitoring	Allowed	No motorized
Patrol of fall/winter slash burns	Allowed	≤ 10 days aggregate per year per parcel
Noxious weed management	Allowed	≤ 10 days aggregate per year per parcel
Slash treatment, non-heavy equipment (chainsaws)	Allowed	No
Road maintenance, mechanical site preparation, and bridge replacement	10 days total per year per unit	10 days total per year per unit

[1] **Spring period** – For the Stillwater Block, this is April 1 through June 15 for non-spring habitat and April 1 through June 30 for areas within spring habitat. For lands within the Swan River State Forest, DNRC scattered parcels in recovery zones, and NROH lands, this is April 1 through June 15.

GB-CY4 Expedited Reduction of Open Road Densities for Recovery Zone Parcels

For parcels in the CYE recovery zone only (Appendix C, Figures C-15 and C-16), DNRC will expedite addressing open road densities, rather than doing it project-by-project as described in the scattered parcels commitments.

1. Within the first 5 years that the HCP and Permit are in effect, DNRC will analyze the road systems on each parcel in the CYE recovery zone and apply the Open Road Reduction Checklist for Projects on Scattered Parcels in Grizzly Bear Recovery Zones (Appendix B, Document B-2).
2. Where potential for closing roads is identified, implementation of closures will take place within the same 5-year period.

IMPLEMENTATION NOTE:

Note that this commitment will be accomplished and completed once during the first 5 years of HCP implementation. It only applies to CYE recovery zone lands and will not need to be re-visited once the assessment and follow-up closures are completed (if necessary) within the first 5-year period of implementation.

GB-CY5 Helicopter Use in the CYE

This commitment supplements commitment GB-PR8.

1. For scattered parcels in the CYE recovery zone only, DNRC will design helicopter operations less than 500 meters (1,640 feet) above ground level for commercial log yarding to avoid important areas for grizzly bears by requiring flight paths to be at least 1 mile from scattered parcels in rest or federally designated security core areas. Where practicable, flight paths will also be designed to avoid or minimize disturbance to any known seasonally important areas.

IMPLEMENTATION NOTE:
Note this commitment will require data sharing with USFS managers to identify where security core areas exist on lands neighboring DNRC ownership. Recommend informal consultation with local grizzly bear experts with DFWP and/or USFWS to locate seasonally important areas.

2. For scattered parcels in the CYE recovery zone and NROH only, DNRC will limit helicopter use associated with activities of short duration requiring few or multiple trips, such as, but not limited to, weed control, prescribed burning ignition and control actions, aerial seeding, and moving large pieces of equipment or materials to remote and/or rugged locations, to those requiring less than 48 hours to complete.

Lynx: Habitat Commitments

LY-HB1 Lynx Habitat Map

DNRC will establish and maintain a lynx habitat map following habitat definitions, protocols and modeling procedures identified in the DNRC HCP lynx habitat mapping protocols (Appendix B, Document B-3 – DNRC Canada Lynx Habitat Mapping Protocols for Implementation of the HCP). Mapped habitat includes portions of the NWLO, SWLO, and CLO. DNRC mapping protocols closely follow information contained in the *Lynx Conservation Assessment and Strategy* (LCAS) (Ruediger et al. 2000). Protocol revisions may be made by DNRC through consultation with the USFWS. The NWLO and SWLO maps will depict structural habitat conditions, including winter foraging habitat, summer foraging habitat, other suitable habitat, and temporary non-suitable habitat. The CLO maps will depict suitable lynx habitat and temporary non-suitable habitat. Maps depicting lynx habitat in western Montana and on each DNRC administrative unit following current mapping protocols are displayed in (Appendix C, Figures C-18 through C-31).

Stands will be added or removed from consideration as lynx habitat following field review and justification by DNRC. DNRC will submit these corrections to the USFWS prior to updating the maps. Changes to lynx habitat maps will be discussed at annual meetings. Gravel pits greater than 5 acres will be tracked and accounted for under normal SLI data collection procedures and updates. As gravel pits are developed, the acres cleared will be subtracted from mapped lynx habitat until future SLI data collection identifies them as forested.

LY-HB2 Coarse Woody Debris

To provide downed woody structure for lynx escape cover, habitat for prey species, and structure that may provide some potential den sites in the future, DNRC commits to the following project-level measures in the HCP project area in mapped lynx habitat.

1. To provide for CWD retention, DNRC will follow Graham et al. (1994) or other publications as mutually agreed to by the USFWS and DNRC. DNRC will emphasize the retention of downed logs of 15-inch diameter or larger where they occur.

IMPLEMENTATION NOTE:
The intent of "emphasizing retention of downed logs >15-inch diameter or larger will be met by ensuring that several of these larger pieces of material are retained in harvest units when it is available. The 15-inch diameter is the measurement of the large end and pieces 20 feet long or greater are desirable. If unavailable, the largest-sized logs present should be substituted. Logged units need not be choked with large logs following treatment in a manner that conflicts with slash reduction requirements or at undue expense to the project. But the presence of a few pieces of large material scattered across each logged unit should be obvious to a casual observer.

Allowance: DNRC's ability to retain CWD may be superseded in special management situations where other goals must be considered, such as:

- Fuels management and aesthetic considerations in the urban interface
- Projects near recreational areas, where downed wood is collected and burned

- Harvest units adjacent to open roads
- Broadcast burning
- Meeting mandated hazard reduction requirements.

The impracticability of implementing this commitment would occur on no more than 10 percent of those DNRC projects within a 5-year period occurring in lynx habitat in the HCP project area.

2. For CWD recruitment, DNRC will retain an average of two snags and two live snag recruitment trees of greater than 21 inches diameter at breast height (dbh) per acre on the warm and moist habitat type group and the wet habitat type group (Green et al. 1992; Pfister et al. 1977). DNRC will retain an average of one snag and one live snag recruitment tree of greater than 21 inches dbh per acre on all other habitat type groups. If snags or snag recruitment trees of greater than 21 inches dbh are not present, then the largest snags or snag recruitment trees available will be retained. Snags may be evenly distributed or clumped. If there is an absence of sufficient snags or recruits, some substitution between the two may occur.
3. On blowdown salvage projects, 1 percent of the blowdown area will be left unsalvaged. The material will preferably be retained in a nonlinear patch or patches.

LY-HB3 Den Site Protection

DNRC will prohibit motorized forest management activities and prescribed burning associated with forest management activities within 0.25 mile of known active lynx den sites from May 1 through July 15. DNRC will verify the active den sites where this restriction would apply.

Allowance: If DNRC confirms that lynx have vacated the den site vicinity prior to July 15, DNRC may proceed with the suspended activities. Documented evidence that lynx have fully vacated the den site will be required prior to resuming activities. A DNRC biologist will provide the documentation and will confer with local lynx researchers or experts, as needed.

LY-HB4 Foraging Habitat Attribute Retention

To facilitate the development of multi-storied forest canopies, DNRC makes the following commitments.

1. In thinned portions of pre-commercial thinning units within mapped lynx habitat, DNRC will retain small, shade-tolerant trees (species such as grand fir [*Abies grandis*], subalpine fir [*Abies lasiocarpa*], and Englemann spruce [*Picea engelmanii*]) that do not pose substantial competition risks to desired crop trees.

IMPLEMENTATION NOTE:
There is no quantitative requirement for amounts of trees of these species that should be retained in pre-commercial thinning units. However, the presence of these species in units after thinning should be apparent to a casual observer. Small seedlings below the height and canopy of desirable crop trees that are often not targeted for thinning can be left to comply with this requirement.

2. DNRC will retain patches of advanced regeneration of shade-tolerant trees (grand fir, subalpine fir, and spruce), as a component of commercial harvest prescriptions in winter foraging habitat. DNRC anticipates that canopy cover of the retained patches would not exceed 10 percent of the stand area through implementation of this measure.

IMPLEMENTATION NOTE:
There is no quantitative requirement for the amounts of retained patches of advanced regeneration of trees of these species in commercial logging units. However, the presence of these patches in units after thinning should be apparent to a casual observer.

LY-HB5 Habitat Connectivity

At the project level, DNRC will design harvest units to maintain a connected network of suitable lynx habitat along RMZs, ridge tops, and saddles.

Allowance: There are situations where maintaining habitat connectivity and leaving travel corridors along ridge tops and saddles are not practicable. Examples of this would be on non-forested ridges; on non-forested saddles; on harvest units where cable systems are used; where habitat associated with scattered parcels is isolated by management on surrounding ownerships; where lynx habitat polygons are isolated within a parcel; where forest types not preferred by lynx bisect lynx habitat; or where silvicultural, fiduciary, or access objectives cannot be met (e.g., presence of lodgepole pine [*Pinus contorta*] stands requiring stand-replacement harvest, locations with high potential for blowdown, limited access, etc.). In instances of impracticability, DNRC will document the circumstances in the MEPA environmental analysis.

IMPLEMENTATION NOTE:
The intended priority of this commitment is to retain connected patches of lynx habitat polygons to the extent possible, recognizing that patches of suitable habitat may often be distant from one another, requiring consideration of non-habitat patches, SMZs etc. to meet connectivity objectives. To meet the intent of this commitment, we should be able to demonstrate through project planning that we made reasonable efforts to retain sizable patches of suitable habitat that are connected across each local landscape given the available conditions.

LY-HB6 Habitat Suitability

Of the total potential lynx habitat in the HCP project area on scattered parcels outside the LMAs, DNRC will maintain at least 65 percent of the area as suitable lynx habitat and no more than 35 percent as temporary non-suitable habitat at the land office scale, as shown in Table B2-8.

Table B2-8. Baseline (April 2012)

Estimated acres of lynx habitat outside the LMAs by Land Office to be retained under the Habitat Suitability Commintment (LY-HB6).

Data from LynxAreaDataCombinationWithTracts20120330.xlsx
(3/30/2012)

Land Office	Total Potential Lynx Habitat	Required Suitable Lynx Habitat at 65 Percent	Temporary Non-Suitable Lynx Habitat Limit at 35 Percent
CLO	37,840	24,596	13,244
NWLO	65,473	42,558	22,916
SWLO	25,121	16,329	8,792

Lynx: Management Area Commitments

LY-LM1 Habitat Suitability

Total potential lynx habitat includes the habitat subsets of suitable lynx habitat and temporary non-suitable habitat. In the identified LMAs, DNRC will maintain at least 65 percent of total potential lynx habitat as suitable lynx habitat, and no more than 35 percent as temporary non-suitable habitat (referred to as 65/35 percent habitat ratio), as shown in Table B2-9.

Table B2-9. Baseline (April 2012)
Estimated Acres of Lynx Habitat that would be Retained in Each LMA under the Habitat Suitability Commitment (LY-LM1).
Data from LynxAreaDataCombinationWithTracts20120330.xlsx
(3/30/2012)

Lynx Management Area	Total Potential Lynx Habitat Acres	Required Suitable Lynx Habitat at 65 Percent	Temporary Non-Suitable Lynx Habitat Limit at 35 Percent
Stillwater East	34,460	22,399	12,061
Stillwater West	35,439	23,035	12,404
Coal Creek	13,168	8,559	4,609
Swan	36,433	23,681	12,752
Seeley Lake	4,531	2,945	1,586
Garnet	3,644	2,369	1,275
Total	**127,675**	**82,989**	**44,686**

LY-LM2 Habitat Conversion Rate

DNRC will not convert more than 15 percent of the total potential lynx habitat to temporary non-suitable habitat per decade within each LMA.

IMPLEMENTATION NOTE:
Allowable conversion acres by LMA are provided in table BLY-LM2 below. These must not be exceeded during any 10 year period. The first period shall run from January 2012 through January 2022.

Table BLY-LM2. Baseline (April 2012)
Estimated Suitable Acres of Lynx Habitat allowed for conversion per Decade under the 15% Habitat Conversion Rate Commitment (LY-LM2).
Data from LynxAreaDataCombinationWithTracts20120330.xlsx
(3/30/2012)

Lynx Management Area	Total Potential Lynx Habitat Acres	Allowable 10-year Suitable Lynx Habitat Reduction at 15 Percent TPH
Stillwater East	34,460	5,169
Stillwater West	35,439	5,316
Coal Creek	13,168	1,975
Swan	36,433	5,465
Seeley Lake	4,531	680
Garnet	3,644	547
Total	**127,675**	**19,151**

LY-LM3 Foraging Habitat

1. In lynx habitat within the LMAs identified in Appendix C, Figures C-29 through C-31, DNRC will maintain at least 20 percent of the total potential lynx habitat as winter foraging habitat, as shown in Table B2-11.

Table B2-11. Baseline (April 2012)
Acres of Lynx Winter Foraging Habitat required for retention in each LMA as required by commitment LY-LM3.
Data from LynxAreaDataCombinationWithTracts20120330.xlsx
(3/30/2012)

Lynx Management Area	Total Potential Lynx Habitat Acres	Required Minimum Winter Foraging Habitat Acres at 20% Level
Stillwater East	34,460	6,892
Stillwater West	35,439	7,088
Coal Creek	13,168	2,634
Swan	36,433	7,287
Seeley Lake	4,531	906
Garnet	3,644	729
Total	**127,675**	**25,535**

Winter foraging habitat will be identified using the DNRC lynx habitat model incorporating SLI filters. Winter foraging habitat is defined as stands exhibiting the following minimum structural characteristics:

- The stand must occur on preferred habitat types (Pfister et al. 1977; DNRC 2008c; Appendix B, Document B-3).
- The stand must have one or more of the following species present: sub-alpine fir, grand fir, or spruce.
- The stand must have at least 10 percent crown closure in trees of 9 inches dbh or greater (i.e., sawtimber category in the SLI).
- The stand must have a minimum of 40 percent total stand crown closure in understory and overstory combined.

IMPLEMENTATION NOTE:
Total stand crown closure (AKA Total Stocking) is an estimate that considers only the ***trees*** in a stand (no shrubs etc.). Tree size classes considered in this estimate include ***established*** seedlings (typically those >1 ft. tall), saplings, poles, on up to the largest sawtimber trees in the stand. The sum of the canopy contribution of all of these size classes in each stand is used to estimate the total stand crown closure.

2. Within pre-commercial thinning projects targeting saplings in lynx habitat in LMAs, identify and retain unthinned 20 percent of the thinning project area. Retained patches should maintain a density of greater than 2,000 stems per acre. In stands where a density of 2,000 stems per acre is not present, retain an area(s) with the greatest density available. To facilitate tracking and promote habitat function, (1) design retention patches to be at least 5 acres when possible, (2) emphasize retention of subalpine fir and Engelmann spruce or grand fir, and (3) locate retention areas adjacent to other suitable lynx habitat. Patches retained for this purpose may not be entered for pre-commercial thinning or commercial harvest until they can structurally meet the minimum DNRC SLI definition of sawtimber (i.e., stands must possess at least 10 percent canopy closure in the overstory in trees at least 9 inches dbh).

IMPLEMENTATION NOTE:
When setting up pre-commercial thinning projects in lynx habitat within LMAs, a broad "potential thinning area" must be identified for each project. Within this area, polygon(s) that will receive thinning treatments ***and*** those that will be deferred as mitigation must be identified and mapped. IT IS IMPORTANT THAT MITIGATION RETENTION AREAS ARE SELECTED CAREFULLY AND TRACKED, BECAUSE THEY CAN NOT RECEIVE ANY ADDITIONAL TREATMENTS UNTIL THEY MATURE AND EVENTUALLY MEET MINIMUM STRUCTURAL REQUIREMENTS OF THE "SAWTIMBER" SIZE CLASS -- Shape files depicting pre-commercial thinning units and unthinned 20% retention areas containing species composition, trees/acre, and average crop tree height data must be submitted to the Technical Services Section for tracking and monitoring purposes.

AQUATICS COMMITMENTS

Aquatics: Riparian Timber Harvest Commitments

AQ-RM1 Class 1 Stream and Lake Riparian Management Zone Commitments

These commitments apply to timber harvests conducted immediately adjacent to Class 1 streams segments and lakes. For the purposes of this commitment, the combined SMZ and RMZ specified under ARM 36.11.425 will be referred to as an RMZ.

DNRC will implement the following commitments for timber harvest within RMZs for Class 1 streams and lakes:

1. DNRC will establish an RMZ with a minimum width equal to the 100-year site index tree height (or 80 feet, whichever is greater) for timber harvests immediately adjacent to Class 1 streams and lakes. The 100-year site index tree height will be determined at the project level by field sampling the age and height of several site trees within the stand and comparing those values to locally or regionally developed site index curves.

IMPLEMENTATION NOTE:
See the RMZ Resources page of the HCP Implementation website for examples of regionally developed site index curves. Or contact your area hydrologist or FMB for assistance in determining 100-year site index tree height.

2. DNRC will maintain a 50-foot-wide no-harvest buffer within Class 1 RMZs. This buffer will start at the edge of the ordinary high water mark (OHWM) and extend across the RMZ to a slope distance of 50 feet when measured perpendicular to the stream or lake. Within the 50–foot-wide no-harvest buffer, it may be necessary to allow corridors associated with cable logging systems used to fully suspend logs across streams. In these situations, the minimum corridors spacing will be 150 feet with no more than 15 percent of the 50-foot buffer affected.

IMPLEMENTATION NOTE:
There are allowances for certain situations that allow harvest within the prescribed 50-foot-wide no-harvest buffer. Look at 'Allowances within Class 1 RMZs': 1(a) and 1(c) starting on AQ-RM Page 4.

3. Harvest prescriptions within the remainder of the RMZ (from 50 feet to a distance equal to the 100-year site index tree height or 80 feet, whichever is greater) will retain shrubs and sub-merchantable trees to the fullest extent possible, and a minimum of 50 percent of the trees greater than or equal to 8 inches dbh.

IMPLEMENTATION NOTE:
There are allowances for certain situations that allow harvest that exceed the minimum retention tree requirements. Look at 'Allowances within Class 1 RMZs': 1(a), 1(b), and 1(c) starting on AQ-RM Page 4.
This commitment does not normally allow for pre-commercial thinning, fuels reduction treatment, or similar thinning activities that would not retain sub-merchantable trees to the

fullest extent possible. In order to engage in these activities, an allowance would have to be invoked.
The spatial distribution of retention trees in the harvested portion of the RMZ should be either:
1) Evenly spread throughout the harvested portion of the RMZ;
2) representative of the distribution of trees in the pre-harvest RMZ; or
3) feathered to favor greater retention as one moves closer to the no-harvest portion of the RMZ and stream. No substantial part of the managed portion of the RMZ shall be clearcut. Small patch openings and group selection harvest are acceptable.

4. Multiple harvest entries into a specific RMZ stand will only occur if (1) the existing RMZ forest stand is classified as a medium-to-well-stocked, pole timber or saw timber size class (as defined by standard DNRC SLI procedures), and (2) the proposed harvest would meet the SMZ Law minimum tree retention requirements.
5. To ensure protection of native fish species from increased stream temperatures, DNRC will monitor stream temperatures as described in HCP Chapter 4, Monitoring and Adaptive Management. Additionally, DNRC will classify specific stream segments as temperature-sensitive reaches and provide additional protections during riparian harvest. This will be achieved by committing to no statistically significant ($p \geq 0.05$) increase in stream temperature attributable to DNRC timber harvest activities in temperature-sensitive reaches.

IMPLEMENTATION NOTE:
Temperature-sensitive stream reaches are those stream reaches that are identified as temperature impaired on the most recent EPA approved version of the Montana DEQ 303(d) list. Contact your area hydrologist or FMB staff for this information.

6. DNRC will extend SMZs to include adjacent wetlands, where the normal SMZ boundary intercepts a wetland (ARM 36.11.302). Retention tree requirements for the adjacent wetland are the same as the requirements for the first 50 feet of the SMZ (ARM 36.11.305).

IMPLEMENTATION NOTE:
The retention tree requirements for that portion of an adjacent wetlands located outside of the 50 foot no-harvest portion of the RMZ are the same as required for Class 1 streams under the SMZ Law. The retention tree requirements for an that portion of an adjacent wetland located outside of the 50 foot no-harvest portion of the RMZ are not the same as required for no-harvest portion of a Class 1 RMZ.

7. DNRC will extend RMZs on Class 1 streams supporting HCP species in situations where channel migration is likely to influence riparian functions that are potentially affected by a timber harvest. DNRC has identified several types of CMZs where this potential is more likely. A CMZ is defined as the width of the floodprone area at an elevation twice the maximum bankfull depth. CMZs usually influenced by forest management activities are limited to those that occur on streams with an entrenchment ratio of greater than 1.4 and with valley slopes of less than 8 percent gradient that exhibit unstable channel conditions or potential for relatively high rates of lateral channel erosion and lateral migration. Entrenchment ratio is the floodprone width of a stream divided by the bankfull width if the stream. The floodprone width is equal to two times the maximum depth of the streams at bankfull flows (Rosgen 1994). CMZs will not be established with entrenchment ratios of

less than 1.4 because such channels are highly confined and have little or no potential for channel migration. Application of CMZs will be determined on a site-specific basis by a DNRC watershed specialist.

8. Two types of CMZs are recognized under this strategy, and they are classified using the following approach:
    a. **Type 1 CMZ** - A Type 1 CMZ corresponds to the floodprone area of streams exhibiting both valley bottom characteristics and alluvial processes. Valley bottom characteristics include channel slopes that are typically less than 1.5 percent and channel patterns that are meandering or braided. Alluvial processes mean that the stream is both eroding and depositing sediment throughout different parts of the channel. An example of an alluvial process would be a bend in the channel of a valley bottom stream, where the outside bend exhibits a deep channel eroding into the stream bank and the inside bend exhibits a shallow channel where eroded sediments are deposited. Streams with Type 1 CMZs typically migrate across valley bottoms rather slowly. Occasionally though, these streams are susceptible to very rapid migration to new or previously abandoned channels during major flood events. Type 1 CMZs are generally associated with Rosgen C, D, DA, and E channel types.
    b. **Type 2 CMZ** - A Type 2 CMZ corresponds to the floodprone area of unstable streams exhibiting sudden erosion and deposition processes. Unstable streams are not able to efficiently transport sediment due to a variety of reasons, which can lead to increased rates of sediment deposition and channel migration. Unstable streams with Type 2 CMZs are uncommon, but where they occur, stream gradients typically range from 1 to 8 percent. Sudden erosion and deposition processes can occur on a Type 2 CMZ when a stream is forced out of its stream banks and into the floodprone area. Examples of sudden erosion and deposition are: (1) a moderately contained stream with evidence of recent sediment deposition on the forest floor outside of the stream channel, (2) alluvial fans, and (3) debris flows or torrents.
9. A CMZ will be established when harvest activities are immediately adjacent to streams supporting HCP fish species that are exhibiting these types of channel migration processes. The level of conservation applied within the CMZ will be determined by the type of CMZ present.
    a. On Type 1 CMZs, the portion of RMZ restricted to 50 percent retention will be extended when necessary to incorporate the entire floodprone area. In the event the width of the floodprone area does not extend beyond the normal RMZ, the standard RMZ harvest restrictions will be applied. The 50-foot no-harvest buffer will not be extended.
    b. Type 1 CMZ established on a stream with an unstable stream channel or stream bank exhibiting evidence of recent lateral migration will receive the same level of protection as designated for a Type 2 CMZ (see commitment 9(c) below).
    c. On Type 2 CMZs, the no-harvest buffer is a combination of the floodprone width plus an additional 25 feet within the RMZ. No timber harvest will occur within the entire floodprone width. Additionally, the delineation of the normal RMZ width (based on 100-year site index tree height or 80 feet, whichever is greater) will begin

at the edge of the floodprone width, and an additional 25-foot no-harvest buffer will be applied within the RMZ.

d. Allowances for the restrictions listed in commitments 9(a) through 9(c) include those listed under Allowances for Class 1 RMZs, below.

10. A DNRC water resource specialist will review all sites where harvest greater than 1 acre is proposed within an RMZ established for a Class 1 stream or lake.

Allowances within Class 1 RMZs:

As part of the HCP riparian timber harvest strategy, allowances associated with the 50-foot no-harvest and 50 percent retention portions of the RMZ (including those extended to incorporate CMZs) may be required in certain cases where harvest is necessary to address specific situations or circumstances that would include fire, insect, and disease salvage and the need to emulate natural disturbance through non-salvage-related harvest.

1. The following allowances may be invoked under this commitment:

   a. In forest stands within an RMZ being impacted by disease or insect infestations (e.g., dwarf mistletoe [Arceuthobium *spp.*], mountain pine beetle [*Dendroctonus ponderosae*], or Douglas-fir beetle [*Dendroctonus pseudotsugae*]), harvest of diseased or insect-infested trees may occur within the 50-foot no-harvest buffer. However, harvest of diseased or insect-infested trees from within the first 50 feet of the RMZ will still meet the minimum retention tree requirements of the SMZ Law. Retained trees will include all streambank trees and downed trees lying within the stream channel or embedded in the stream bank. To help control disease or insect infestations, harvest of diseased or insect-infested trees from within the remaining RMZ may exceed those levels necessary to meet the normal 50 percent retention requirement.

   b. In areas within an RMZ that have been subjected to severe or stand-replacement wildfires, salvage harvest of dead trees may exceed the normal 50 percent retention requirement in that portion of the RMZ outside of the 50-foot no-harvest buffer. No salvage harvest of fire-killed trees will occur within the 50-foot no-harvest buffer. Downed trees lying within the stream channel or embedded in the stream bank will not be removed. These harvests will still meet the minimum retention tree requirements of the SMZ Law.

   c. DNRC may manage a portion of the total Class 1 RMZ acreage on forested trust lands using harvest prescriptions designed to meet the minimum retention tree requirements of the ARMs adopted under the SMZ Law (ARM 36.11.305). These requirements include retention of at least 50 percent of the trees greater than or equal to 8 inches dbh on each side of the stream, or 10 trees per 100-foot segment of stream (equal to approximately 86 trees per acre), whichever is greater. Tree retention will be based on the number of trees within the first 50 feet of the RMZ on both sides of a stream. A 50-foot-wide no-harvest buffer would not be required in these situations. The RMZ stands targeted to be managed in this manner will be those stand types where shade-tolerant species exist and regeneration or maintenance

of shade-intolerant tree species is necessary to achieve or maintain desired future stand types or provide long-term riparian functions.

2. When an allowance is invoked, the following conditions would apply:

    a. The minimum requirements of the SMZ Law must still be met.

IMPLEMENTATION NOTE:
These include retention of at least 50% of the trees greater than or equal to 8 inches dbh, or 10 trees per 100-foot segment of stream, whichever is greater; and shrubs and submerchantable trees must be protected and retained in the entire SMZ to the fullest extent possible.

    b. A DNRC water resource specialist will review all sites when an allowance is proposed regardless of the number of RMZ acres affected.

    c. Salvage harvests in a Class 1 RMZ where HCP fish species are present may trigger a changed circumstance. In those instances, DNRC will follow the changed circumstances process for addressing salvage harvest (see HCP Chapter 6, Changed Circumstances).

    d. Removal of individual hazard trees within the no-harvest buffer is allowed. A hazard tree is any tree that poses a risk to public safety, roads, structures, property, and other improvements. Public safety refers to situations that pose a foreseeable risk of injury or death to a person.

IMPLEMENTATION NOTE:
Removal of individual hazard trees as outlined above under 2(d) is not subject to the 20% limit as described above under 2(e).

    e. Within each aquatic analysis unit identified in the HCP project area, the amount of Class I RMZ managed under these allowances will be limited so that the extent that the total RMZ area treated under these allowances when combined with the amount of existing RMZ area in a non-stocked or seedling/sapling size class such that it does not exceed 20 percent of the total Class 1 RMZ acres occurring on forested trust lands in that unit.

IMPLEMENTATION NOTE:
Use of RMZ harvest allowances will be tracked by the FMB. The caps on the allowance will be calculated by FMB annually and provided to field staff. RMZ harvest allowance numbers can be found on the HCP Implementation website.

AQ-RM2 Class 2 and 3 Riparian Management Zone Commitments

DNRC will implement the following commitments for timber harvest conducted immediately adjacent to Class 2 streams, Class 3 streams, and other bodies of water as defined by the SMZ Law (ARM 36.11. 312):

1. Timber harvest conducted within an SMZ established for a Class 2 stream, Class 3 stream, or other body of water will implement DNRC's existing timber harvest practices, which

include the Montana Forestry BMPs, Forest Management ARMs 36.11.425 and 426, and the SMZ Law (ARMs 36.11.302 through 313).

2. Timber harvest conducted in an SMZ established for a Class 2 stream, Class 3 stream, or other body of water will comply with all applicable requirements regarding harvest prescriptions and tree retention requirements, including:
    a. Clearcutting will be prohibited in the SMZ of a Class 2 stream, Class 3 stream, or other body of water.
    b. Timber harvests within Class 2 SMZs will retain at least 50 percent of the trees greater than or equal to 8 inches dbh on each side of a stream or 5 trees per 100-foot segment, whichever is greater. Timber harvest conducted within SMZs of Class 2 streams, Class 3 streams, or other bodies of water will protect and retain sub-merchantable trees and shrubs to the fullest extent possible.
    c. Retention trees within Class 2 SMZs will be representative of species and sizes in the pre-harvest stand.
    d. SMZs of Class 2 and 3 streams and other bodies of water will be extended to include adjacent wetlands, where the normal SMZ boundary intercepts a wetland. Retention tree requirements for the adjacent wetland are the same as the requirements for the normal SMZ.
    e. For Class 2 streams, the SMZ will be extended to 100 feet when SMZ slopes are greater than or equal to 35 percent. When the SMZ is extended, most retention will be selected within 50 feet of the stream. The remaining retention trees may be left anywhere in the SMZ.
3. On Class 2 or 3 streams with high erosion risk, an RMZ will also be established in accordance with ARM 36.11.425.

Aquatics: Sediment Delivery Reduction Commitments

AQ-SD1 Commitments for Minimizing Forest Management Roads

The HCP commitments for minimizing roads used for DNRC forest management activities incorporate the existing DNRC sediment delivery reduction practices for planning transportation systems for the minimum number of road miles (ARM 36.11.421). The HCP commitments will include the following existing DNRC practices:

1. DNRC will only build roads that are necessary for current and future management objectives.
2. DNRC will identify necessary roads by conducting transportation planning as part of landscape-level or project-level evaluations.
3. DNRC transportation planning will consider
    a. Existing and probable future access needs within the road planning project area
    b. The relationship of existing access routes and road systems on adjacent parcels
    c. Logging system capabilities
    d. Access needs of planned and future forest improvement activities
    e. Access needed for fire protection
    f. Public access
    g. Planning road systems cooperatively with adjacent landowners whenever practicable
    h. Protection of wildlife and aquatic habitat.
4. DNRC will evaluate and consider the use of alternative yarding systems that minimize road needs if such systems are practicable and economically feasible and their use will meet immediate and foreseen future management objectives.
5. DNRC will use existing roads located in an SMZ only if potential impacts to water quality and aquatic habitat can be adequately mitigated. DNRC will consider relocating roads outside of the SMZ when these impacts cannot be adequately mitigated.
6. DNRC will restrict or reclaim that non-essential to near-term future management needs, or where unrestricted access would cause excessive resource damage. The term "near-term future" generally refers to a period of 15 or 20 years. Decisions on road restrictions or reclamation will be based on consideration of several factors, including, but not limited to, planned activities, desired future stand conditions, silvicultural objectives, infrastructure needs, cost, fire protection access needs, and available human and financial resources.

IMPLEMENTATION NOTE:
The commitments for minimizing roads utilize existing practices already in place to meet BMPs and follow existing Forest Management Rules.

AQ-SD2 Commitments for Reducing Sediment Delivery from Existing Roads

The commitments for reducing sediment from all existing DNRC roads incorporate the existing ARMs, BMPs, and policies covering DNRC forest management programs as described in the existing practices. All existing DNRC roads include permanent, temporary, open, closed, abandoned, reclaimed surfaces, as well as all stream crossing structures. (Check the current road inventory data collection application.) These measures already provide a large degree of conservation to HCP fish species and provide a sound basis for meeting the HCP sediment delivery reduction strategy objectives..

The HCP commitments include several additions to the current DNRC practices that will provide better assurances that the HCP sediment delivery reduction strategy objectives are being met. These additions include a timeline for completing road inventories in watersheds supporting HCP fish species, a prioritization scheme for implementing corrective actions, and a timeline for identifying and implementing corrective actions, as described below.

1. DNRC will complete inventories of all existing roads and stream crossing structures used for forest management activities and abandoned roads that are within the HCP project area and located within watersheds (sixth-order HUCs) supporting HCP fish species. Roads inventoried will be limited to those for which DNRC has legal access and sole ownership, or cost-share or reciprocal road agreements.

IMPLEMENTATION NOTE:
Although these are programmatic commitments that may be implemented using contracted services or other systematic means, timber sale planning and the development of specific timber sale road logs should be utilized to help meet this commitment.

2. DNRC will complete inventories using current methods and procedures, consisting currently of the road inventory data collection application. These methods and procedures may be revised over time to include additional information, take advantage of new technology, or gain efficiency. However, the essential elements of the existing inventory will be maintained. Any revision of the methods and procedures will continue to provide all information required for the identification of existing and potential sediment sources and the development of corrective measures.
3. DNRC will complete road inventories on all watersheds supporting bull trout (including core and nodal habitat) during the first 10 years that the Permit is in effect.
4. All road inventories for watersheds supporting westslope cutthroat trout or Columbia redband trout will be completed within the first 20 years that the Permit is in effect.
5. Based on the completed road inventories, DNRC will classify all inventoried road segments/sites as being either:
    a. Low risk of sediment delivery (meets BMPs or has very low risk of sediment delivery)
    b. Moderate risk of sediment delivery (does not meet BMPs, has moderate risk of sediment delivery, or meets BMPs but is poorly located)
    c. High risk of sediment delivery (does not meet BMPs, is poorly located, is currently delivering sediment, or has high risk of future sediment delivery).
6. Corrective actions will be prioritized by considering the following factors:

a. Watersheds supporting bull trout
b. Watersheds supporting westslope cutthroat trout or Columbia redband trout
c. Watersheds supporting other sensitive beneficial uses (e.g., domestic/municipal uses)
d. Watersheds in which TMDLs are in place
e. 303(d) listed watersheds in need of TMDL development.

7. Corrective actions will be prioritized for implementation within a watershed by:
    a. High-risk sites,
    b. Moderate-risk sites, then
    c. Low-risk sites whenever feasible.
8. Project-level, site-specific corrective actions will be developed and implemented on sites identified as having a high or moderate risk of sediment delivery. These corrective actions will only occur on roads and stream crossing structures where DNRC has legal access and has sole ownership. These sites will be improved to a level necessary to reduce risk of sediment delivery to streams supporting fish species and to meet or exceed the habitat requirements for HCP fish species. Primary mechanisms to achieve this action are development and implementation of site-specific road improvements and road upgrades, road abandonment or road reclamation, culvert replacement and/or removal, and other mitigation measures necessary to bring problem road segments up to minimum BMP standards.

IMPLEMENTATION NOTE:
Timber sale projects and timber sale contracts will be the primary mechanism used to implement road corrective actions. Road maintenance and forest improvement funds as well as grants and other sources of special funding may be used for high priority sites where no timber sale projects are occurring.

9. On roads with shared ownership where DNRC does not have sole ownership, DNRC will continue to work with other cooperators to address road segments identified as having moderate or high risk of sediment delivery as described under existing practices.
10. Corrective actions will be completed on all identified sites with high risk of sediment delivery located within bull trout watersheds that are in the HCP project area within the first 15 years that the HCP and Permit are in effect. Annual updates and the 5-year monitoring report will be used to document progress of corrective actions.
11. Corrective actions will be implemented at all identified high-risk sites in watersheds supporting westslope cutthroat trout or Columbia redband trout within the first 25 years that the HCP and Permit are in effect. Annual updates and the 5-year monitoring report will be used to document progress on these corrective actions.
12. DNRC will continue to implement the road sediment source inventories and corrective actions in watersheds supporting HCP fish species throughout the duration of the Permit term.

13. DNRC will incorporate the goals, targets, and prescriptions contained within approved TMDLs applicable to covered activities where DNRC has actively participated in the development of the TMDL, and the TMDL planning area is located within a watershed containing HCP project area parcels supporting HCP fish species. In these cases, the requirements of the TMDL may be applied in conjunction with the commitments contained in one or more of the aquatic conservation strategies. DNRC will actively participate in TMDL development when 25 percent or more of the TMDL planning area consists of HCP project area parcels in watersheds supporting HCP fish species.

AQ-SD3 Commitments for Reducing Sediment Delivery from New Road Construction, Reconstruction, Maintenance, and Use

The commitments for reducing potential sediment delivery from all new DNRC road construction, reconstruction, maintenance, and use rely primarily on DNRC's continuing commitment to implement existing SMZ Laws, ARMs, and policies covering DNRC forest management programs, as described above for the existing practices. These policies apply to both new temporary and new permanent roads. These commitments also include several additions to the current DNRC practices that will provide better assurances for meeting conservation strategy objectives. These commitments include a process for ensuring (1) adequate review of proposed road activities potentially affecting HCP fish species habitat by a DNRC water resource specialist, (2) design and implementation of site-specific mitigation measures, and (3) adequate monitoring and adaptive management on both the implementation and effectiveness of the conservation commitments. The additions included in these commitments are:

1. A DNRC water resource specialist will review road management activities associated with forest management projects located within watersheds (sixth-order HUCs) supporting HCP fish species. The water resource specialist will make recommendations that will be integrated into the development of road standards, contract specifications, site-specific BMPs, and other mitigation measures. The purpose and role of the specialist reviews are detailed in commitment 5 below. Specific road management activities that will be reviewed by a water resource specialist include
    a. Road construction and reconstruction projects meeting one or more of the following criteria:
        i. Greater than 0.5 mile in length,
        ii. Located within the RMZ of a Class 1 stream supporting an HCP fish species,
        iii. Includes the installation or removal of a Class 1 stream crossing, or
        iv. Located on sites with high erosion risk as defined by ARM 36.11.403(82).
    b. Road maintenance projects and use of roads for hauling timber harvest greater than 100 mbf involving one or more of the following circumstances:
        i. Located within the RMZ of a Class 1 stream supporting an HCP fish species,
        ii. Includes a Class 1 stream crossing, or
        iii. Located on sites with high erosion risk as defined by ARM 36.11.403(82).

2. New road locations or reconstruction of existing roads will avoid high-hazard sites prone to mass failure as required in BMP III.A.4. Proposed road locations will be screened during the cumulative watershed effects (CWE) coarse-filter analysis for locations associated with slope instability and prone to mass failure (see Section 2.2.3.5, Cumulative Watershed Effects Conservation Strategy). A DNRC water resource specialist will review all proposed road locations in the field when a CWE coarse-filter analysis indicates that the proposed road is located on sites with high risk of slope instability in watersheds supporting HCP fish species.
3. When new road construction or reconstruction cannot be avoided on potentially unstable slopes, DNRC will design and implement site-specific mitigation measures to reduce the risk of mass failure.
4. Roads deemed unnecessary for future use that are reclaimed will be left in a stable condition not requiring maintenance.

   DNRC will design and implement site-specific BMPs and other mitigation measures to reduce the risk of sediment delivery to streams affecting HCP fish species to the maximum extent practicable. A DNRC water resource specialist will make recommendations that will be integrated into the development of road standards, contract specifications, site-specific BMPs, and other mitigation measures.

   Allowance: In cases where measures necessary to adequately reduce the risk of sediment delivery may not be practicable or feasible due to site, funding, or other limitations, decision rationale will be documented in the HCP implementation checklist and provided to the USFWS in the annual update.
5. DNRC contracts that address forest management activities conducted in watersheds supporting HCP fish species and including road construction, reconstruction, maintenance, and use will include applicable road design specifications and operating requirements. These specifications will include road construction and maintenance standards, resource protection requirements, BMP requirements, special operating and design requirements, and site-specific BMP and mitigation measure specifications.
6. DNRC will incorporate the goals, targets, and prescriptions contained within approved TMDLs applicable to covered activities where DNRC has actively participated in the development of the TMDL, and the TMDL planning area is located within a watershed containing HCP project area parcels that support HCP fish species. In these cases, the requirements of the TMDL may be applied in conjunction with the commitments contained in one or more of the aquatic conservation strategies. DNRC will actively participate in TMDL development when 25 percent or more of the TMDL planning area consists of HCP project area parcels in watersheds supporting HCP fish species.
7. DNRC will administer road construction projects to ensure that contract specifications, BMPs, and other resource protection requirements are met on a weekly basis when road construction and maintenance activities are actively occurring.
8. On sites where practices implemented have resulted in unacceptable levels of impact to soil or water resources, appropriate mitigation and/or rehabilitation measures will be implemented as soon as possible. Examples of unacceptable levels of impact are major

departures in BMPs resulting in actual sediment delivery to streams or a high risk of sediment delivery to streams

AQ-SD4 Commitments for Reducing Potential Sediment Delivery from Timber Harvest, Site Preparation, and Slash Treatments

The commitments for reducing potential sediment delivery from DNRC timber harvest activities (harvest, yarding, site preparation, and slash treatment) focus on reducing the levels of soil disturbance and subsequent levels of erosion and providing buffers zones for effective filtration of sediment. The commitments are primarily based on existing practices, but also include new measures for (1) providing a process for ensuring adequate review by a DNRC water resource specialist of harvest activities potentially affecting HCP fish species habitat, (2) designing and implementing site-specific mitigation measures, and (3) providing adequate feedback using both implementation and effectiveness monitoring. The additions included in the commitments are:

1. A DNRC water resource specialist will review all proposed timber harvests greater than 100 mbf located within a watershed supporting an HCP fish species. The water resource specialist will conduct a field review and make recommendations that would be integrated into the development of contract specifications, site-specific BMPs, and other mitigation measures. The purpose and role of the specialist reviews are detailed in commitment 4 below.

   Allowance: In situations or circumstances determined to have low risk of substantial soil disturbance, the DNRC water resource specialist may forgo a field review and not make any recommendations to be integrated into contract specifications. Low risk will be determined after consulting with a DNRC water resource specialist. An example of a situation that would not require field review by a water resource specialist might include activities such as salvage harvest from existing roads with no RMZs present.

2. Timber harvests proposed on high-hazard sites prone to mass failure will be screened during the CWE coarse-filter analysis as outlined in the HCP CWE conservation strategy (Section 2.2.3.5). A DNRC water resource specialist will conduct a field review of all proposed harvest locations when CWE coarse-filter analysis indicates the timber harvests are located on sites with high risk of slope instability and are prone to mass failure.
3. When timber harvests are conducted on unstable slopes, DNRC will modify harvest prescriptions and/or design and implement mitigation measures to avoid increasing the risk of mass failure.
4. DNRC will design and implement timber sale contract specifications, special timber harvest operation requirements, site-specific BMPs, and other mitigation measures to reduce the risk of sediment delivery to streams affecting HCP fish species to the maximum extent practicable. A DNRC water resource specialist will make recommendations that will be integrated into the development of contract specifications, special operating requirements, site-specific BMPs, and other mitigation measures.

   Allowance: In cases where measures necessary to adequately reduce the risk of sediment delivery may not be practicable or feasible due to site, funding, or other limitations, decision

rationale will be documented in the HCP implementation checklist and provided to the USFWS in the annual update.

5. Contracts addressing DNRC timber harvest and associated forest management activities will include applicable standard operating requirements and restrictions; special operating requirements and restrictions; BMPs; and site-specific mitigation measures designed to avoid, minimize, or mitigate the risk of sediment delivery to streams affecting HCP fish species.
6. DNRC will administer timber sale projects to ensure that contract specifications, BMPs, and other resource protection requirements are met.
7. DNRC will incorporate the goals, targets, and prescriptions contained within approved TMDLs applicable to covered activities where DNRC has actively participated in the development of the TMDL, and the TMDL planning area is located within a watershed containing HCP project area parcels that support HCP fish species. In these cases, the requirements of the TMDL may be applied in conjunction with the commitments contained in one or more of the aquatic conservation strategies. DNRC will actively participate in TMDL development when 25 percent or more of the TMDL planning area consists of HCP project area parcels in watersheds supporting HCP fish species.
8. DNRC will complete contract inspections during routine contract administration. DNRC will document the levels of compliance with contract specifications and requirements.
9. On sites where practices implemented have resulted in unacceptable levels of impact to soil or water resources, appropriate mitigation and/or rehabilitation measures will be implemented as soon as possible. Examples of unacceptable levels of impact are major departures in BMPs resulting in actual sediment delivery to streams or a high risk of sediment delivery to streams.

AQ-SD5 Commitments for Reducing Potential Sediment Delivery from Gravel Excavation, Processing, Hauling, and Use

These commitments build upon the commitments for gravel pits described in the grizzly bear conservation strategy, including commitments GB-PR7, GB-NR6, GB-ST5, GB-SW5, and GB-SC4.

1. DNRC will design and implement site-specific BMPs and other mitigation measures to reduce the risk of sediment delivery to streams affecting HCP fish species from all gravel pits. A DNRC water resource specialist will make recommendations that will be integrated into the development of contract specifications, permits, and Plans of Operation (as required under ARM 17.24.217).
2. DNRC gravel pits will comply with biennial agreements established with county weed boards. Noxious weeds will be managed utilizing an integrated weed management approach. Such practices include, but are not limited to: (1) The use of weed-free equipment; (2) re-vegetation of disturbed areas with site-adapted species, including native species as available; and (3) biological control measures included in timber sale contracts and Plans of Operations (as required under ARM 17.24.217). Non-vegetated areas associated with large gravel pits may not exceed 40 acres.

3. **Allowance:** Gravel pits will not be developed within SMZs. Some site-specific minor levels of borrowing and stockpiling of material may occur in an SMZ where required to construct, reconstruct, improve, or maintain roads or road stream crossings. If borrows occur in SMZs, measure to minimize risk of sediment delivery will be developed by a DNRC water resource specialist and integrated into the development of contract specifications or permits.
4. **Allowance:** Gravel pits will not be developed within RMZs. Some site-specific minor levels of borrowing and stockpiling of material may occur in an RMZ where required to construct, reconstruct, improve, or maintain roads or road stream crossings. If borrows occur in RMZs, measures to minimize risk of sediment delivery will be developed by a DNRC water resource specialist and will be integrated into the development of contract specifications or permits.
5. **Allowance:** The Stillwater Block and the Swan Unit may each have one medium non-reclaimed gravel pit within the portion of an RMZ that extends beyond the SMZ.
6. Gravel development and use associated with borrows is considered a normal and necessary component of road construction and road maintenance. Development and use of borrows is allowed unconstrained when associated with allowable road construction and/or road maintenance activities.

Aquatics: Fish Connectivity Commitments

AQ-FC1 Fish Connectivity Commitments

The following commitments comprise the HCP fish connectivity conservation strategy

1. This strategy for connectivity applies to HCP project area lands and those roads and stream crossings that DNRC has access to and sole ownership of. For roads with shared ownership, DNRC will work with other road cooperators to address fish passage issues.
2. DNRC will provide connectivity to adult and juvenile bull trout, westslope cutthroat trout, and Columbia redband trout during low to bankfull flows by emulating streambed form and function at stream crossings. DNRC will use the best available design technology while considering site conditions and cost efficiencies.

Allowances for AQ-FC1:

a. Road-stream crossings that will provide connectivity to limited or marginal fisheries habitat may not be required to emulate streambed form and function when approved by the USFWS. The USFWS will conduct reviews of requests for this allowance and approve or deny within 45 days.

IMPLEMENTATION NOTE:
Requests for invoking this allowance should be sent to the Forest Management Bureau. The Forest Management Bureau will initiate the communication or formal request directly with the USFWS.

b. DNRC may receive a 124 permit that requires the installation of a stream crossing structure that does not meet the design standards contained in the fish connectivity strategy. In these cases, DNRC will notify the USFWS during the annual update that an allowance is being invoked.

IMPLEMENTATION NOTE:
In certain instances, FWP may require DNRC through the 124 permit to install a stream-crossing structure that does not meet the design requirements of AQ-FC1.2. For example, FWP may want to maintain a barrier to protect an isolated genetically pure population. In these cases, DNRC is required to meet the regulatory requirements of the 124 permit. These circumstances only require that DNRC notify, but not gain approval from, the USFWS.

3. DNRC will inventory and assess for connectivity all existing stream crossings on known and presumed (see AQ-RM1 commitments) bull trout, westslope cutthroat trout, and Columbia redband trout habitat not surveyed during the DNRC Fish Passage Assessment Project. DNRC will also foster cooperative relationships with other agencies and landowners to further refine the status and prioritization of bull trout, westslope cutthroat trout, and Columbia redband trout connectivity on the watershed scale. The methods for assessing fish passage and connectivity will be the same as those used for the DNRC Fish Passage Assessment Project.

IMPLEMENTATION NOTE:
The Forest Management Bureau has completed an inventory and assessment of all know crossing structures affecting streams supporting HCP fish species. The FMB maintains a database of this inventory and assessment. Contact the FMB fisheries biologist for more information on this database.

4. Road-stream crossings constructed on streams with bull trout, westslope cutthroat trout, and Columbia redband trout habitat will include the following additional mitigations:
    a. Construction windows are generally July through mid-August (within habitat occupied by bull trout), July through November (within habitat occupied by westslope cutthroat trout or Columbia redband trout), or as specified by MFWP in a 124 permit.
    b. DNRC will implement reasonable measures to exclude and/or salvage fish from construction sites, such as constructing block nets and removing fish from de-watered stream sections, as practicable.
    c. As practicable and economically feasible, stream flows will be rediverted through newly constructed crossing structures to allow engineered substrates to adjust to stream energies and processes. Regarding the rediversion of stream flows through a newly constructed crossing structure, diligence during the final phases of construction when stream flows are rediverted into crossing structures can help ensure proper sealing of engineered substrates and prevent costly reinstallation of substrate material. This practice is most appropriate where higher stream energies and steeper gradients occur.
    d. Montana Forestry BMPs will be met at each site during and after modification or construction. A DNRC contract administrator will be present during all fish passage installations. The application of BMPs will occur during contract administration and after site modification or construction. Contract administrators will have the authority to halt or modify a project if BMPs are not being met during construction.
    e. DNRC will provide training on fish connectivity design and construction techniques for field staff responsible for fish passage installations. Training will occur early in the implementation of the HCP. Additional training will be provided as new technologies become available or there are changes in personnel.
5. DNRC will prioritize road-stream crossing improvements based on existing levels of connectivity, as well as species status and population biological goals established while taking into consideration other regulatory agencies' or cooperative organizations' activities and goals. Genetic data used for a coarse filter will be obtained primarily from MFWP data sets. Where practicable and where time is permitting, DNRC will collaborate with MFWP to collect species genetics information to supplement those data sets.
    a. Fish connectivity coarse filter
        i. Priority 1 – Habitat includes any bull trout life stage
        ii. Priority 2 – Habitat includes 100 percent genetically pure westslope cutthroat trout or Columbia redband trout

iii. Priority 3 – Habitat includes westslope cutthroat trout or Columbia redband trout of unknown genetic purity

iv. Priority 4 – Habitat includes 80 to 99 percent genetically pure westslope cutthroat trout or Columbia redband trout.

b. Fish connectivity fine filter (within priority groups)

i. Determine if the action of culvert removal or replacement meets conservation objectives (i.e., prevention of genetic introgression or displacement by non-native species) while considering the goals of MFWP, the USFWS, and other appropriate organizations.

ii. Determine the status of existing connectivity for different life stages at varying flows through model outputs, field verification, and other available data.

iii. Crossing site improvements may also be prioritized based on management opportunities, such as associated timber sales and other projects, forest improvement funds, grant availability, and structural failure due to catastrophic natural events.

6. DNRC will maintain a planning schedule containing a list of road-stream crossing sites to be addressed by this strategy. The planning schedule will identify current site prioritizations, potential mechanisms for implementation, and project status. The schedule will be reviewed annually and updated as new road-stream crossing sites are identified, there are changes in crossing status, new information becomes available, or improvements are completed. DNRC will provide this planning schedule to MFWP, the USFWS, and other appropriate organizations to effectively collaborate with adjacent landowners and other agencies on bull trout, westslope cutthroat trout, and Columbia redband trout conservation objectives.

IMPLEMENTATION NOTE
The Forest Management Bureau maintains this planning schedule. Periodic updates (at least annually) are provided to all Land Office Area hydrologist. Contact your Area hydrologist or the FMB Fisheries Biologist for more information.

7. All Priority 1 sites determined to require connectivity will be improved within the first 15 years that the HCP and Permit are in effect.

8. All road-stream crossings will allow connectivity of adult and juvenile bull trout, westslope cutthroat trout, and Columbia redband trout during low to bankfull flows within the first 30 years that the HCP and Permit are in effect, except in those cases identified in commitment 5(b)(i).

9. Every 5 years, one-sixth of all sites that do not meet the objectives of the fish connectivity strategy as determined by the DNRC Fish Passage Assessment Project will be improved to meet the strategy or, at a minimum, have final plans and designs for improvements to meet the strategy.

   If, due to initial programmatic adjustments in HCP implementation, the first one-sixth of the sites cannot be improved in the first 5-year period, then those sites will be improved within the first 10 years that the HCP and Permit are in effect. Sites that may be delayed under this

scenario would be improved in addition to other sites selected for improvement during the second 5-year period.

10. The selection of a road-stream crossing design on streams supporting HCP fish species will be determined by DNRC based on stream channel form and function, costs, long-term environmental risk (sedimentation), and anticipated use. The selection of site-specific stream crossing designs is contingent upon approval by regulatory permitting authorities such as MFWP and MDEQ. The construction and maintenance of forest roads, including bridge and culvert stream crossings, are activities that normally do not require 404 discharge permits administered by the U.S. Army Corps of Engineers (33 CFR 323.4 (1i) and (6iii)). The majority of fish passage structures in streams supporting HCP fish species will be designed to pass a minimum of the 50-year flood event. In order of preference, subject to environmental, operational and economic feasibility, design options that DNRC will consider include:
    a. Permanent structure removal
    b. Temporary bridges
    c. Permanent bridges
    d. Bottomless arch culverts
    e. Fords – (1) reinforced fords such as armored fords, and (2) fords with streambeds suitable to handle predicted loads (both are generally only feasible in low-traffic areas)

IMPLEMENTATION NOTE:
Contact your Area Land Office hydrologist or FMB fisheries biologist for assistance in identifying and designing stream crossing structures that comply with the requirements of the commitments contained in this section.

Aquatics: Cumulative Watershed Effects Commitments

AQ-CW1 Cumulative Watershed Effects Commitments

The HCP CWE conservation strategy is a framework that essentially clarifies the existing Forest Management ARMs (36.11.423, Watershed Management – Cumulative Effects). Under this strategy, DNRC will continue to analyze the potential for impacts due to CWE as currently conducted under ARM 36.11.423. Additional commitments included in the conservation strategy are designed to :

1. specify the type of forest management activities that will be analyzed for CWE,
2. define the described levels of risks,
3. implement alternatives or measures to offset potential impacts, and
4. provide consistent documentation of analysis methods and rationale used for risk determinations.

DNRC will analyze CWE on all forest management projects (including projects categorically excluded from MEPA analysis) involving:

1. upland timber and salvage harvest of more than 15 acres or 50 mbf,
2. RMZ harvest of green timber,
3. salvage harvest within the RMZ of 1 or more acres of dead and dying timber,
4. new road construction greater than 0.5 miles,
5. new road construction located within an RMZ of a class 1 stream supporting HCP fish species, or
6. construction of any length of new road that includes the installation of new Class 1 stream crossings.

Watershed resource specialists will complete CWE assessments which will be sent to the project leader. Using the analysis, DNRC will ensure that a forest management project will not increase impacts beyond the physical limits imposed by the stream system for supporting its most restrictive beneficial use(s), when considered with other existing and proposed state activities for which the scoping process has been initiated. The analysis will identify specific measures, where appropriate, for mitigating adverse effects on beneficial water uses.

IMPLEMENTATION NOTE:
When CWE assessments are completed by the water resource specialist for a timber sale , the CWE assessment will be sent to the project leader and will be forwarded to the FMB with the Timber Sale Contract. For non-timber sale assessment CWE assessments, save in the file server specific to your unit or area office.

For this strategy:

- RMZ harvest refers to harvest within the SMZ, the RMZ as defined by the HCP riparian harvest conservation strategy, or the CMZ as defined by the HCP riparian harvest conservation strategy.
- Physical limits generally refer to streambank stability, sediment yield, streambed stability, channel processes, etc.
- Restrictive beneficial uses are those uses of a water body that are classified by MDEQ in established water quality standards. Two examples of beneficial uses are the support of cold-water fisheries and drinking water.

DNRC makes the following commitments to address CWE:

1. DNRC will determine the necessary level of CWE analysis on a project-level basis, and, at a minimum, will complete a watershed coarse-filter (Level 1) analysis (see Document B-9—CWE Coarse Filter Analysis Form, on the 'HCP Documents' page of the HCP internal website). The level of analysis will depend on assessment of the following factors.
    - The extent of the proposed activity will be determined through evaluation of the magnitude, range, or geographic scope of the activity. Extent will also consider the degree or level of intensity of the activity. For example, regeneration harvest would be considered a high-intensity activity, and salvage harvest of individual dead trees would be considered a low-intensity activity.
    - Levels of past activities will be determined through the Level 1 analysis and then integrated into further analysis if necessary.
    - Beneficial uses at risk are those beneficial uses considered to be impaired relative to established water quality standards.
    - DNRC will use the factors listed above during the Level 1 analysis to determine the risk of existing CWE or the potential for CWE to result from a proposed DNRC forest management activity. If a Level 1 analysis determines there is only a low potential for adverse cumulative impacts, then the analysis will be considered complete. Low potential for impacts implies there is a low likelihood that adverse CWE of a proposed DNRC action can be detected and foreseen by DNRC. If there is a moderate to high potential for adverse CWE to result from the proposed DNRC forest management activity as determined by a Level 1 analysis, then a Level 2 or Level 3 analysis will be conducted.

    a. DNRC will complete a preliminary watershed coarse-filter (Level 1) analysis on all eligible projects. This analysis will rely primarily on existing data and information, and will include documentation of rationale describing those variables that may contribute to CWE, an assessment of adverse CWE risk, and a description of future detailed analysis, if required.

    b. DNRC will complete a more detailed Level 2 and/or Level 3 watershed analysis on projects where DNRC determines (through the Level 1 analysis) there is greater than a low potential for CWE.

A low potential for CWE implies that there is a low likelihood that adverse CWE of a proposed action can be detected and foreseen by DNRC when considering past and present activities on all ownerships. Future actions are also considered when they are state-sponsored actions that are under concurrent consideration by any state agency through environmental analysis or permit processing procedures.

Level 2 watershed analysis will generally include four steps

i. Evaluation of Level 1 analysis results

ii. Field review of the project area by a DNRC watershed resource specialist

iii. Evaluation of existing direct and indirect effects on watershed resources within the project area to establish a baseline of existing conditions

iv. qualitative assessment by DNRC of both the watershed coarse-filter (Level 1) analysis data and collective projected direct and indirect effects of the proposed action relative to the baseline of existing conditions.

Examples of current Level 2 watershed analysis methodologies that could be used by DNRC include the MEPA Environmental Assessment Checklist (DNRC 1998b), Pfankuch channel stability rating (USFS 1974), Lassen National Forest method (Young 1989), and *A Framework for Analyzing the Hydrologic Condition of Watersheds* (McCammom et al. 1998).

c. DNRC will complete a detailed Level 3 watershed analysis when the Level 1 or Level 2 analysis predicts or indicates the existence of or potential for unacceptable CWE as a result of the proposed forest management activity.

i. A Level 3 watershed analysis uses appropriate levels of information and technology in a quantitative assessment by DNRC of both (1) the Level 1 and Level 2 analysis data, and (2) the collective projected direct and indirect effects of the proposed action relative to the baseline of existing conditions. Examples of current Level 3 watershed analysis methodologies that could be used by DNRC include water yield increases relative to equivalent clearcut areas (USFS 1974), Washington Forest Practices Board (WFPB) *StandardMethodology for Conducting Watershed Analysis* (WFPB 2002), *Forest Practices Cumulative Watershed Effects Process for Idaho* (IDL 2000), *An Approach to Water Resources Evaluation of Non-Point Silvicultural Sources* (EPA 1980), and *WATSED* (*water and sediment yields*) (USFS 1992).

ii. Unacceptable CWE implies there is a high degree of risk that an adverse CWE of an action can be foreseen and detected by DNRC when considering past and present activities on all ownerships. Future actions are also considered when they are state-sponsored actions under concurrent consideration by any state agency through environmental analysis or permit processing procedures.

2. DNRC will establish thresholds for CWE on a watershed-level basis when completing all Level 2 or Level 3 analyses. Thresholds will take into account items such as:

- stream channel stability,
- beneficial water uses, and
- existing watershed conditions.

The thresholds established for any analysis will be based on the ranges of environmental variability found to be naturally occurring within the watershed(s) encompassing the project area.

For this analysis framework:

a. Thresholds are either qualitative (including narrative descriptions) or quantitative standards used to describe acceptable levels of risk of CWE. For example, thresholds for a Level 2 analysis may be low, moderate, and high, while thresholds for a Level 3 analysis may be 5 percent, 10 percent, and 15 percent.

b. A watershed-level basis is specific to the watershed boundary containing the headwater streams to the drainage(s) within the project area up to a maximum of the sixth-order HUC designation.

c. Stream channel stability describes the ability of a given stream reach or network to facilitate the movement of relatively equal quantities of incoming and outgoing sediment classes. Stream channel stability also describes the ability of a given stream reach or network to facilitate a range of flow regimes without increased rates of in-stream erosion, migration, or flooding beyond those that would otherwise be expected to occur.

d. Existing watershed conditions include variables such as forest cover, road construction, road conditions, flow regimes, natural disturbance, geology, susceptibility to erosion, and other concurrent management proposals.

3. DNRC will set water quality thresholds at a level that ensures compliance with water quality standards and protection of beneficial water uses, including HCP fish species habitat, with a low to moderate degree of risk.

a. Water quality standards are established by MDEQ (ARM 17.30.641, Water Quality – Surface Water Quality Standards and Procedures).

b. In watersheds of water-quality-limited water bodies, DNRC will set thresholds at a level providing a low degree of risk to beneficial water uses.

c. A watershed of a water-quality-limited water body is analogous with the sixth-order HUC watershed contributing to a 303(d) listed water body. A water body identified on a current 303(d) list is determined by MDEQ to have impaired water quality for one or more reasons. The MDEQ maintains 303(d) listings through an interagency agreement with the EPA, the entity responsible for implementation of the CWA.

4. DNRC will implement management mitigations or project alternatives to offset potential impacts when a high risk of CWE is apparent after Level 2 or Level 3 analysis. Management mitigation measures will be designed to reduce the potential for CWE to a moderate or low level.

5. DNRC will consider implementing management mitigation or project alternatives when a moderate risk of CWE is apparent after Level 2 or Level 3 analysis.
6. Whenever feasible, DNRC will cooperate with other landowners in watersheds with mixed ownership to minimize CWE within acceptable levels of risk. Feasibility for cooperation with other landowners in a watershed to minimize CWE will depend on (1) DNRC time, financial, and logistical constraints; and (2) the willingness of other landowners to cooperate in such efforts.

CHANGED CIRCUMSTANCES

DNRC and USFWS are required to ensure that changed circumstances are identified and planned for in the HCP. We have specific processes we need to follow if a changed circumstance is triggered. The entire suite of potential changed circumstances and processes that we must follow are explained in HCP Chapter 6.

For field practitioners, the most relevant to be aware of are Changed Circumstances Due to Natural Disturbances. The triggers that initiate such changed circumstances are as follows:

Grizzly Bear

If a fire, insect or disease outbreak, or blow-down event happens in an area that is in "rest" status, a changed circumstance may be triggered. If DNRC plans a timber salvage project, there are some allowances for interrupting the rest period, but there are also some limits.

Canada Lynx

If a fire, insect or disease outbreak, or blow-down event causes DNRC to be out of compliance with the lynx habitat commitment (65% suitable & 20% winter foraging in LMA's; or 65% suitable outside of LMA's) a changed circumstance is triggered.

Aquatic Species

A changed circumstance is triggered if a fire, insect or disease outbreak, or blow-down event results in both of the following two criteria:

1. 90 percent stand mortality on 1,000 to 10,000 acres in the HCP project area within a sixth-order HUC that contains a Class 1 RMZ that supports an HCP fish species.
2. Where 20 percent or more of the watershed area has been subject to 90 percent stand mortality.

Or, all of the following three criteria:

1. Occurs in watersheds supporting core populations of bull trout or core populations of westslope cutthroat trout, or supporting any populations of Columbia redband trout
2. 90 percent stand mortality has affected 25 percent or greater of the RMZ area for Class 1 RMZs supporting HCP fish species that are located in the HCP project area within the affected watershed (sixth-order HUC)
3. A minimum of 20 acres of RMZ was affected.

If a changed circumstance is triggered, immediately:

1. Contact your Area wildlife and/or watershed specialist,
2. Contact your HCP liaison at the FMB, and
3. Read about in HCP Chapter 6.

GLOSSARY